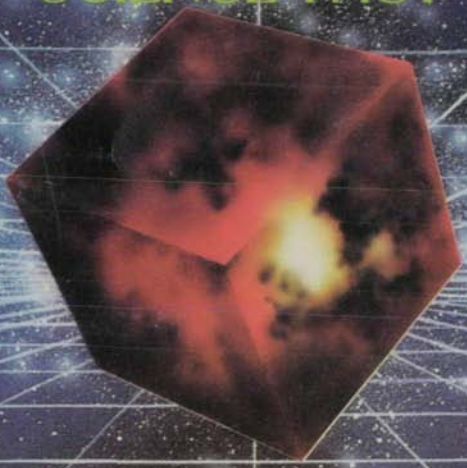
SEPTEMBER 1991 $2.50/$3.25 CAN.

INCE 1930
STOUNDING

SCIENCE FICTION analog SCIENCE FACT



A 50TH ANNIVERSARY FOR...

ISAAC ASIMOV

Gold

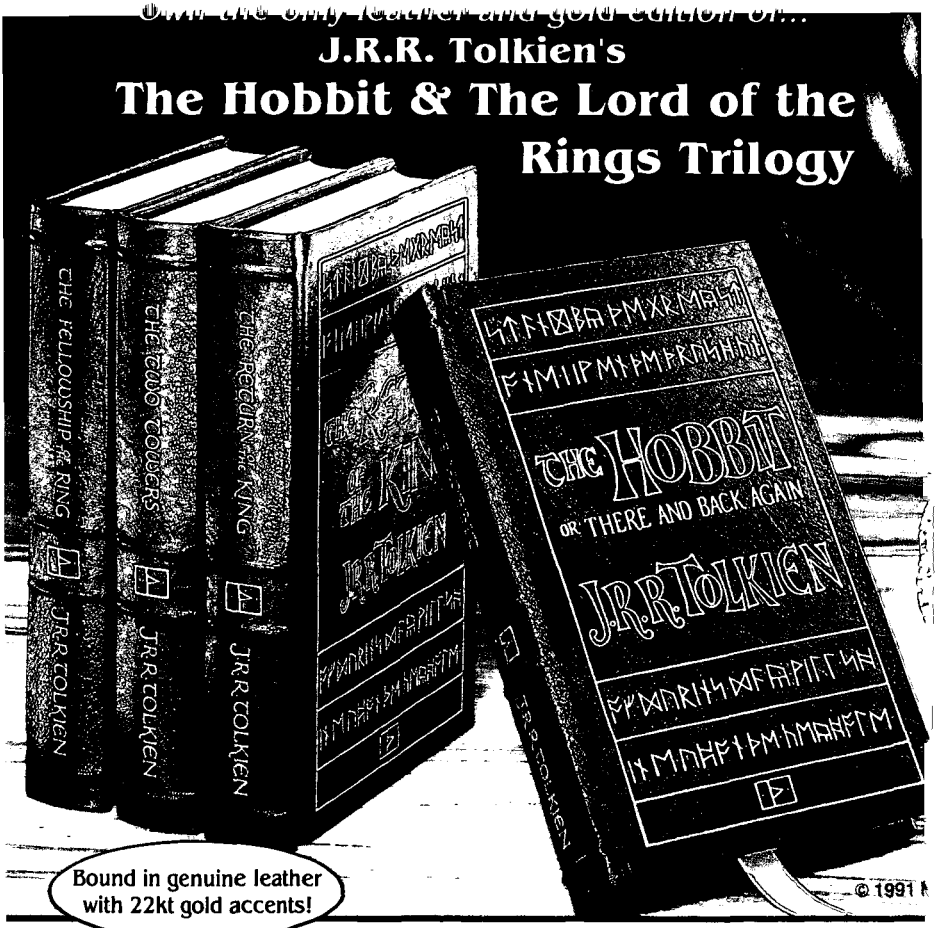
LOIS McMASTER BUJOLD

PAULA ROBINSON

LICENSED TO LINZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

Own the only leather and gold edition of...

J.R.R. Tolkien's
The Hobbit & The Lord of the Rings Trilogy



Bound in genuine leather with 22kt gold accents!

© 1991 M

Here are examples of the magnificent illustrations you will find in these deluxe editions.

LICENSED TO LINZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

In four epic volumes, masterful storyteller J.R.R. Tolkien created the magical Third Age of Middle-earth – where tiny creatures, called Hobbits, journey the forests and mountains in a daring odyssey to save their world. These beloved classics – *The Hobbit* and the "Lord of the Rings" trilogy of *The Two Towers, The Fellowship of the Ring,* and *The Return of the King* are superb fantasy-adventures. Now, you can acquire all four of these famous works in a stunning leather-bound set!

Bound in genuine leather, accented with 22kt gold.

These beautiful volumes are meticulously bound in rich, genuine leather and printed on acid-neutral paper to last for generations. The traditional hubbed spines glimmer with real 22kt gold. Front and back covers gleam with deeply inlaid golden designs. Pages are gilded on all three sides. Each volume features a spectacular full-color frontispiece by acclaimed fantasy illustrator, Michael Hague. And *The Hobbit* is illustrated by Tolkien himself!

Limited availability – order now.

Each volume is attractively priced at only $39.50, and your satisfaction is guaranteed. Previous printings of this luxurious edition have all sold out quickly. Don't risk disappointment, mail the Reservation Application *today*!

The Easton Press

47 Richards Avenue • Norwalk, Conn. 06857

RESERVATION APPLICATION

The Hobbit & The Lord of the Rings Trilogy

The Easton Press
47 Richards Avenue
Norwalk, Conn. 06857

Please mail promptly.

Please accept my reservation for the four-volume set – *The Hobbit* • *The Two Towers* • *The Fellowship of the Ring* • *The Return of the King*. I understand that if not delighted, I may return my set within 30 days of receipt for a full refund. Please send me _____ four-volume set(s).
Qty.

☐ For each four-volume set ordered, charge four monthly installments of $41* to my credit card, beginning at time of shipment.

☐ MasterCard ☐ VISA ☐ Discover ☐ Amer. Express

_____

Credit Card Number Expiration Date

Signature _____
(All orders subject to acceptance.)

Name _____
PLEASE PRINT CLEARLY

Address _____

City/State/Zip _____

☐ I prefer to pay by check. Enclosed is a deposit of $41* for each four-volume set. Bill me for the remaining three monthly installments.

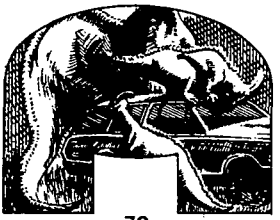
*Includes $1.50 shipping and handling per volume. Any applicable sales tax will be billed with shipment. Please allow 4-8 weeks for shipment.

CONVERTED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

193-1005

analog

10



72

56

Vol. CXI No. 11
September 1991

Next issue on sale
August 20, 1991

Serial

BARRAYAR, (Part III of IV), Lois McMaster Bujold ____ 104

Novelettes

GOLD, Isaac Asimov ____ 10
NO TIME LIKE THE PRESENT, Paula Robinson ____ 72

Science Fact

BEATING WARHEADS INTO PLOWSHARES, Kevin J. Anderson ____ 41

Short Stories

A SWEET DISORDER, Julia Ecklar ____ 56
PURGATORY, Don Sakers ____ 97

Reader's Department

THE EDITOR'S PAGE ____ 4
IN TIMES TO COME ____ 70
BIOLOG, Jay Kay Klein ____ 71
THE ALTERNATE VIEW, G. Harry Stine ____ 100
THE REFERENCE LIBRARY, Tom Easton ____ 161
BRASS TACKS ____ 169
THE ANALOG CALENDAR OF UPCOMING EVENTS ____ 176

Cover by Broeck Steadman

Joel Davis
President

A. Bruce Chatterton
Publisher

Stanley Schmidt
Editor

Tina Lee
Managing Editor

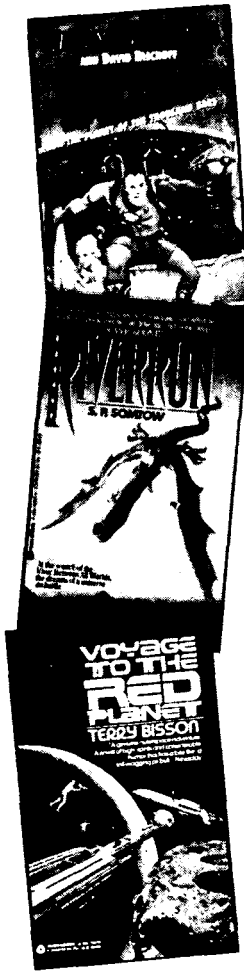
Terri Czeczko
Art Director

Indicia on Page 6

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

AVON BOOKS

THE FINEST IN SCIENCE FICTION AND FANTASY



BILL, THE GALACTIC HERO #5: *On The Planet of Ten Thousand Bars*

Harry Harrison and David Bischoff

Harry Harrison, the bestselling author of *West of Eden* and *The Stainless Steel Rat*, teams up with David Bischoff, author of *War Games*, to send Bill, the Galactic Hero, through time, space and sobriety.

Will Bill survive the assassin hippies? Will he swallow the foaming lies of Barworld's existence? Will he ever discover the meaning of life? Find out—*On The Planet of Ten Thousand Bars*!

*With a bonus portfolio of combat sketches by acclaimed illustrator Mark Pacella

RIVERRUN

S.P. Somtow

At the source of the River Between All Worlds, the dreams of a universe do battle.

"It is easy to predict great things for so accomplished and talented a writer as this." —*The Washington Post*

"One of the most gifted masters of color and spectacle of this century—Somtow is no less than that!" —Theodore Sturgeon

VOYAGE TO THE RED PLANET

Terry Bisson

From the highly acclaimed, Nebula Award-winning author of *Talking Man* and *Fire On The Mountain*, comes a riveting adventure novel of a future space voyage, hailed as "a wonderful story" by the *Los Angeles Times*.

"Funny, inventive and smart, the best kind of science fiction adventure." —*San Francisco Chronicle*

"Fresh, imaginative....It is the Bissons of the field upon whom the future of science fiction depends." —*The Washington Post*

AVON BOOKS
The Hearst Corporation

Coming in September 1991

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

Editorial

HOW-TO

Stanley Schmidt

As every editor knows, the readers of science fiction tend to be people with restless minds and an active interest in the future. This means that a great many of you are not content merely to read the thoughts of others about where mankind is going and who else might be out there. You have your own ideas, and often express them in a variety of ways, from bull sessions at conventions, to letters to the editor, to writing your own stories. In fact, it often seems that virtually everybody out there is a would-be writer!

Which is just fine with us, because we're always looking for new talent. Writers who break into the field by writing short stories and novelettes for magazines later tend to get so busy writing books that they write less and less for the magazines, and we need new blood to replace them. Even when that doesn't happen, we always want to offer our readers the most entertaining and stimulating material we can get, and we don't care where it comes from. If you can write a better story than last year's most popular writer, I'll cheerfully take yours.

But how can you *learn* to write stories that I, or some other editor, will want to buy and place before a hundred thousand readers? Writing, especially fiction writing, and *extra* especially *science* fiction writing, is a complicated, subtle skill. It cannot be taught in the same way as, say, plumbing, where one person can write and another can follow step-by-step instructions for changing a faucet washer. Some maintain that writing can't be taught at all, but only learned by practice, practice, and more practice. However, many of us can at-

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

test from personal experience that it *is* possible to help someone learn.

The lead story in this issue, for example, is Isaac Asimov's "Gold," which was written in part to commemorate the fiftieth anniversary of the publication of "Nightfall." "Nightfall," now widely recognized as a classic, was not quite the first story of a new and unknown writer, but it was a very early story by a very young man. Isaac Asimov's very first stories, like those of most writers, did not sell. He has often said publicly that he owes a great deal of his later success to the help he received from John W. Campbell, Jr., who edited this magazine from 1937 to 1971. (Those familiar with Asimov's career will recognize "Gold" as, in part, a tribute to the Asimov-Campbell working relationship.) I received the same kind of help near the end of that period. I can hardly claim anything like Isaac's notoriety as a writer, but I can assure you that John Campbell's rejection letters and conversations were invaluable in learning what I know about how to write stories people will pay to read. Many others have had similar experiences.

I try to pass Campbell's favor forward, insofar as I can, by helping budding writers clear the initial hurdles and launch careers—but I can't do it for everybody. (Neither could Campbell, contrary to the impression some people wrongly draw from stories like Asimov's! He spent a lot of time helping young Isaac Asimov, not because he did it for everybody, but because Isaac was Isaac and had talent that John wanted to cultivate. I occasionally get an irate letter from a new writer who says "John W. Campbell would never have sent me that form rejection!"—but the fact is that John *wrote* that form rejection, and sent me quite a few of them before he sent me anything else.)

I don't think any editor *likes* sending form rejections, but the vast majority of us have to, in the vast majority of cases. I, for instance, receive approximately a hundred manuscripts in a typical week. I read all of them. When I find one that I'd *almost* like to publish, I will attempt to tell the writer why it doesn't quite satisfy me as is—and that is seldom fast or easy. Some writers include notes telling me that surely I can spend "just a minute or two" to write a few words about what's wrong with their story, but it's not that simple. In the first place, even if it *could* be done with just a minute or two, that would still add a couple of hours to my already hectic work week. In the second place, it would actually add far more than that, and the time simply isn't available.

Why would it take far more? Please remember that I am not employed to give writing instruction to everybody who asks for it, but to obtain the material needed to fill this magazine and keep people buying it. This means that my first contact with a manuscript is normally a fast reading aimed solely at producing a yes or no answer to a simple question: "Does this interest me enough to warrant either buying it or spending company time trying to figure out how to improve it?" In at least 90% of all cases, I can see very quickly that the answer is, "No." This is not to say that all those stories are terrible; it says only that they are not of sufficiently immedi-

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

ate interest to *Analog* to justify spending further *Analog* time on them. Many are sent back not because of obvious, glaring faults, but simply because they do not stand out as sufficiently *special*.

The few which I do judge to warrant additional time use a *lot* of extra time. Deciding "not interested" is often easy (for somebody who has learned how). Deciding *why* I'm not quite sold usually requires a much slower reading, followed by a considerable amount of pondering, before I can put a verbal finger on what the problem is. I remember one case, not terribly atypical, where I liked everything about a story except the ending—and it was *six hours* before I could put into words *why* I didn't like the ending.

Spending all that time on the relatively few stories where the effort looks likely to pay off simply does not leave time for any individual comment on the majority of stories. (No, not even checklists provided by the author. Even deciding where to put a check mark

STANLEY SCHMIDT ..... Editor
TINA LEE ..... Managing Editor
IAN RANDAL STROCK ..... Assistant Editor
SCOTT L. TOWNER ..... Editorial Assistant
A. BRUCE CHATTERTON ..... Publisher
TERRI CZECZKO ..... Art Director
ANTHONY BARI ..... Junior Designer
CAROLE DIXON ..... Production Director
CYNTHIA MANSON ..... Director of Marketing and Subsidiary Rights
CONSTANCE SCARBOROUGH . Contracts Manager
VEENA RAGHAVAN ..... Director, Special Projects
CHRISTIAN DORBANDT ..... Newsstand Marketing and Promotion Manager
DENNIS JONES ..... Newsstand Operations Manager
ELIZABETH BEATTY ..... Circulation Director
PHYLLIS JESSEN ..... Circulation Planning Director
JUDY DORMAN ..... Advertising Coordinator
IRENE BOZOKI ..... Classified Advertising Director
BARBARA ZINKHEN ...Classified Advertising Manager

Published since 1930.

JOEL DAVIS
President

CARL BARTEE
Vice President
Manufacturing

JOE De FALCO
Vice President
Finance

MARY TZIMOKAS
Vice President
Circulation

First issue of *Astounding* January 1930.

NPA

ADVERTISING OFFICES
NEW YORK
(212) 557-9100

Analog Science Fiction/Science Fact (Astounding) is published every 28 days which includes special issues in January and July by Davis Publications, Inc. at $2.50 a copy in U.S.A., $3.25 in Canada. 1 year subscription for $34.95 in the U.S.A. and possessions, in all other countries, $40.50 (GST included in Canada, GST #R123993198) payable in advance in U.S. funds. First copy of new subscription will be mailed within eight weeks of receipt of order. When reporting change of address allow 6 to 8 weeks and give new address as well as the old address as it appears on the last label. Second-class postage paid at New York, NY, and at additional mailing office. Canadian 3rd class postage paid at Windsor, Ontario

© 1991 by Davis Publications, Inc., all rights reserved. Protection secured under the Universal Copyright Convention. Reproduction or use of editorial or pictorial content in any manner without express permission is prohibited. All stories in this magazine are fiction. No actual persons are designated by name or character. Any similarity is coincidental. Printed in U.S.A. All submissions must be accompanied by stamped self-addressed envelope, the publisher assumes no responsibility for unsolicited manuscripts or artwork.

POSTMASTER: SEND to ANALOG SCIENCE FICTION/SCIENCE FACT (ASTOUNDING) P.O. BOX 7061, Red Oak, IA 51591. IN CANADA RETURN TO 1801 SOUTH CAMERON, WINDSOR, ONT. CANADA N9B 3E1
Editorial and Advertising: Analog Science Fiction/Science Fact, 380 Lexington Avenue, New York, NY 10168-0035
Subscriptions: Analog Science Fiction Science Fact, P.O. Box 7061, Red Oak, IA 51591 ISSN 0161-9328

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

The second book of "a grand fantasy on a scale approaching *Lord of the Rings.*"*

STONE OF FAREWELL

Book Two of
Memory, Sorrow and Thorn

TAD WILLIAMS

"Few fantasies have attempted the scope and depth of Williams' examination of the struggle between being and unbeing, and fewer still have achieved the complexity of his world-vision. In this purest of fantasies, created solely by the vigor of Williams' imagination, readers will find an exquisite rendering of the conflict between forces of light and darkness."

—*San Francisco Chronicle*

$5.99
DAW Books, Inc.
Distributed by Penguin USA

**The Cincinnati Post*

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

takes extra time, and the result is at best an oversimplified and therefore misleading critique.) Like most editors, I regret this; I'd really *like* to be able to comment on every story. But, like most editors, I can't.

However. . . .

The editors of *Analog* and *Isaac Asimov's Science Fiction Magazine*—Gardner Dozois, Tina Lee, Stanley Schmidt, Ian Randal Strock, and Sheila Williams—have recently attempted to do *something* about the situation. No, we haven't found a way to generate enough extra person-hours to critique every submission we get. What we have done is to compile a book, which you may have seen advertised in the last couple of issues, called *Writing Science Fiction and Fantasy*. It's published by St. Martin's Press, in hard covers because we intended it as a reference book that you'll want to keep and use for years to come.

No, it is not a how-to manual that will tell you, "Follow Steps A, B, and C, and tomorrow you will be a best-selling author." Nobody can do that; there are too many ways for writers to work, and too many writers competing for the available publication slots, for that to be possible. Nor can it provide specific criticism on your work. What it *can* do is give you a great many pointers on techniques that work and pitfalls you should avoid, from a wide sampling of writers and editors who have demonstrated their know-how by applying it to successful careers.

It includes, for example, observations on the special nature of science fiction and fantasy by such folk as Robert A. Heinlein, Gardner Dozois, and me. Isaac Asimov, James Patrick Kelly, Jane Yolen, and Connie Willis discuss the various aspects of storytelling (*any* kind of storytelling), from plotting, dialogue, and characterization to the special requirements of humor. Our particular kinds of storytelling require all of those skills plus a whole set of additional ones concerned with the creation of fantastic but believable settings—so we have Poul Anderson on worldbuilding, Hal Clement on creating beings to inhabit those worlds, John Barnes on socioeconomic systems, and Norman Spinrad on very distant futures. Finally, there's a section on the business of writing: how to prepare and submit manuscripts, the author-editor relationship, and that sort of thing. We even have a detailed market listing, as up-to-date as we can make it—prominently including our own magazines, of course, but also every other that we could find out about.

Some of these essays have appeared elsewhere, but never before between one set of covers. Many were written especially for this book and are not available anywhere else. All represent distillations of things which we have found useful in our own careers, and which we believe will help you, too. If you are at all interested in writing yourself, or even just in learning how the business works, I hope you will seriously consider getting a copy. You can either order it, using the coupon in this magazine, or pick it up at a bookstore. Either way, I think you'll find it a big help in getting started. We *wish* we could help each of you individually, and we've tried hard to make this book the next best thing. ■

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

N E W S F R O M

Questar
SCIENCE FICTION FANTASY

The thrilling saga continues!

WINDS OF WAR HOWL THROUGH SPACE!

The second installment of the compelling epic of a future World War II in deep space from Ken Kato!

AD 2425. Yamato, the imperialistic, tyrannical Japanese Sector of colonized space has smashed treaties and brazenly conquered peaceful peoples. Its powerhungry emperor, armed with a wealth of devastating weapons and a billion devoted, hi-tech samurai, has Amerika in his sights. And unless the American colony galvanizes its forces against this fierce enemy, Yamato will unleash its might...and enslave Amerika!

"It is a space opera for moderns with the power to please those who ordinarily don't care for space opera ...Doc Smith and Ron Hubbard never produced anything to match YAMATO."
—John Dalmas, author of *The Regiment*

Cover art by Royo
0-446-36189-5/$4.50
(In Canada: $5.99)

Also read:
Yamato—A Rage in Heaven, Part 1
0-446-36141-0/$4.50
(In Canada: $5.99)

A WORD FROM BRIAN THOMSEN

For me a new book does not necessarily have to have the words "First time in print" on it. It just has to be new to me. As a result, I can still be treated to the new Heinlein, Herbert, Bester, and Sturgeon despite the fact that their illustrious output was unjustly curtailed several years ago.

HEAVEN CHRONICLES is a new book. This is the first time "Outcast of Heaven Belt" has been paired with Joan's other asteroid belt story, "Legacy," and the many fans of *Catspaw* and her other recent books can enjoy the latest volume in the Vinge canon as we eagerly await this fall's publication of *The Summer Queen*. Both were new to me and I'm glad I didn't miss them.

When you see me around ask me about the month where Summer arrives in the Fall.

Questar is a registered trademark of Warner Books, Inc.

ALSO THIS MONTH:

ALSO THIS MONTH:

THE HEAVEN CHRONICLES
by Joan D. Vinge

Award-winner Joan D. Vinge's acclaimed asteroid belt adventures, available for the first time in one volume!

Heaven Belt, a fabulously rich asteroid system, is the last hope for the desperate crew of the starship *Ranger*. However, before they can explain their quest, they are attacked by a dying society of Belters torn by civil war. Now the *Ranger's* mission of mercy has become a race for survival as they fight to save their ship—and their lives.

0-446-36118-6/$4.99
(In Canada: $5.99)

Also read:
Catspaw
0-445-20531-8/$4.95
(In Canada: $5.95)
Snow Queen
0-445-20529-6/$4.95
(In Canada: $5.95)

© 1991 Warner Books, Inc. Printed in USA

AVAILABLE AT BOOKSTORES EVERYWHERE WARNER BOOKS

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

LICENSED TO GMZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

An Open Letter to the Late John Wood Campbell, Jr.

Dear John:

Fifty years ago, this month, you published my story "Nightfall" in the September 1941 issue of *Astounding Science Fiction.* The story was mine, but the idea was yours. For several years, I wrote stories under your kindly and gentle, but steel-firm guidance, and I owe you all that has happened to me since.

Twenty years ago, you died, at the age of 61. I have missed you every day of those 20 years, and I wish you could have lived to see this golden anniversary of ours. It was possible. You would have been only 81.

But alas, I must celebrate it alone, and so I have written a story for you, John. I had to do it without your help, which is a terrible disadvantage, but I have done my best. Thank you once again, John, for everything, and in honor of the anniversary, I call the story:

GOLD

Isaac Asimov

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

Jonas Willard looked from side to side and tapped his baton on the stand before him.

He said, "Understood now? This is just a practice scene, designed to find out if we know what we're doing. We've gone through this enough times so that I expect a professional performance now. Get ready. All of you get ready."

He looked again from side to side. There was a person at each of the voice-recorders, and there were three others working the image projection. A seventh was for the music and an eighth for the all important background. Others waited to one side for their turn.

Willard said, "All right now. Remember this old man has spent his entire adult life as a tyrant. He is accustomed to having everyone jump at his slightest word, of having everyone tremble at his frown. That is all gone now but he doesn't know it. He faces his daughter whom he thinks of only as a bent-headed obsequious girl who will do anything he says, and he cannot believe that it is an imperious queen that he now faces. So let's have the King."

Lear appeared. Tall, white hair and beard, somewhat disheveled, eyes sharp and piercing.

Willard said, "Not bent. Not bent. He's eighty years old but he doesn't think of himself as old. Not now. Straight. Every inch a king." The image was adjusted. "That's right. And the voice has to be strong. No quavering. Not now. Right?"

"Right, chief," said the Lear voice-recorder, nodding.

"All right. The Queen."

And there she was, almost as tall as Lear, standing straight and rigid as a statue, her draped clothing in fine array, nothing out of place. Her beauty was as cold and unforgiving as ice.

"And the Fool."

A little fellow, thin and fragile, like a frightened teenager but with a face too old for a teenager and with a sharp look in eyes that seemed so large that they threatened to devour his face.

"Good," said Willard. "Be ready for Albany. He comes in pretty soon. Begin the scene." He tapped the podium again, took a quick glance at the marked-up play before him and said, "Lear!" *and his baton pointed to the Lear voice-recorder moving gently to mark the speech cadence that he wanted created.*

Lear says, "How now, daughter? What makes that frontlet on? Methinks you are too much o' late i' th' frown."

The Fool's thin voice, fifelike, piping, interrupts, "Thou wast a pretty fellow when thou hadst no need to care for her frowning—"

Goneril, the Queen, turns slowly to face the Clown as he speaks, her eyes turning momentarily into balls of lurid light—doing it so momentarily that those watching caught the impression rather than viewed the fact. The Fool completes his speech in gathering fright and backs his way behind Lear in a blind search for protection against the searing glance.

Goneril proceeds to tell Lear the facts of life and there is the faint crackling of thin ice as she speaks, while the music plays in soft discords, barely heard.

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

Nor are Goneril's demands so out of line, for she wants an orderly court and there couldn't be one as long as Lear still thought of himself as tyrant. But Lear is in no mood to recognize reason. He breaks into a passion and begins railing.

Albany enters. He is Goneril's consort—round-faced, innocent, eyes looking about in wonder. What is happening? He is completely drowned out by his dominating wife and by his raging father-in-law. It is at this point that Lear breaks into one of the great piercing denunciations in all of literature. He is overreacting. Goneril has not as yet done anything to deserve *this*, but Lear knows no restraint. He says:

"Hear, Nature, hear! dear goddess, hear!
Suspend thy purpose, if thou didst intend
To make this creature fruitful.
Into her womb convey sterility;
Dry up in her the organs of increase;
And from her derogate body never spring
A babe to honour her! If she must teem,
Create her child of spleen, that it may live
And be a thwart disnatur'd torment to her.
Let it stamp wrinkles in her brow of youth,
With cadent tears fret channels in her cheeks,
Turn all her mother's pains and benefits
To laughter and contempt, that she may feel
How sharper than a serpent's tooth, it is
To have a thankless child!"

The voice-recorder strengthened Lear's voice for this speech, gave it a distant hiss, his body became taller and somehow less substantial as though it had been converted into a vengeful Fury.

As for Goneril, she remained untouched throughout, never flinching, never receding, but her beautiful face, without any change that could be described seemed to accumulate evil so that by the end of Lear's curse, she had the appearance of an archangel still, but an archangel ruined. All possible pity had been wiped out of the countenance, leaving behind only a devil's dangerous magnificence.

The Fool remained behind Lear throughout, shuddering. Albany was the very epitome of confusion, asking useless questions, seeming to want to step between the two antagonists and clearly afraid to do so.

Willard tapped his baton and said, "All right. It's been recorded and I want you all to watch the scene. He lifted his baton high and the synthesizer at the rear of the set began what could only be called the instant replay.

It was watched in silence, and Willard said, "It was good, but I think you'll grant it was not good enough. I'm going to ask you all to listen to me, so that I can explain what we're trying to do. Computerized theater is not new, as you all know. Voices and images have been built up to beyond what human beings can do. You don't have to break your speechifying in order to breathe; the range and quality of the voices are almost limitless; and the images can change to suit the words and action.

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

Still, the technique has only been used, so far, for childish purposes. What we intend now is to make the first serious compu-drama the world has ever seen, and nothing will do—for me, at any rate—but to start at the top. I want to do the greatest play written by the greatest playwright in history: *King Lear* by William Shakespeare.

"I want not a word changed. I want not a word left out. I don't want to modernize the play. I don't want to remove the archaisms, because the play, *as written*, has its glorious music and any change will diminish it. But in that case, how do we have it reach the general public? I don't mean the students, I don't mean the intellectuals, I mean *everybody*. I mean people who've never watched Shakespeare before and whose idea of a good play is a slapstick musical. This play *is* archaic in spots, and people don't talk in iambic pentameter. They are not even accustomed to hearing it on the stage.

"So we're going to have to translate the archaic and the unusual. The voices, more than human, will, just by their timbre and changes, interpret the words. The images will shift to reinforce the words.

"Now Goneril's change in appearance as Lear's curse proceeded was good. The viewer will gauge the devastating effect it has on her even though her iron will won't let it show in words. The viewer will therefore feel the devastating effect upon himself, too, even if some of the words Lear uses are strange to him.

"In that connection, we must remember to make the Fool look older with every one of his appearances. He's a weak, sickly fellow to begin with, broken-hearted over the loss of Cordelia, frightened to death of Goneril and Regan, destroyed by the storm from which Lear, his only protector, can't protect him—and I mean by that the storm of Lear's daughter's as well as of the raging weather. When he slips out of the play in Act III, Scene VI, it must be made plain that he is about to die. Shakespeare doesn't say so, so the Fool's face must say so.

"However, we've got to do something about Lear. The voice-recorder was on the right track by having a hissing sound in the voice-track. Lear is spewing venom; he is a man who, having lost power, has no recourse but vile and extreme words. He is a cobra who cannot strike. But I don't want the hiss noticeable until the right time. What I am more interested in is the background."

The woman in charge of background was Meg Cathcart. She had been creating backgrounds for as long as the Compu-drama technique had existed.

"What do you want in background?" Cathcart asked, coolly.

"The snake motif," said Willard. "Give me some of that and there can be less hiss in Lear's voice. Of course, I don't want you to show a snake. The too obvious doesn't work. I want a snake there that people can't see but that they can *feel* without quite noting *why* they feel. I want them to know a snake is there without really knowing it is there, so that it will chill them to the bone, as Lear's speech should. So when we do it over, Meg, give us a snake that is not a snake."

"And how do I do that, Jonas?" said

LICENSED TO UIZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

ORSON SCOTT CARD

Praise for ENDER'S GAME:

"Intense is the word for Orson Scott Card's ENDER'S GAME.... [An] affecting novel, full of surprises."

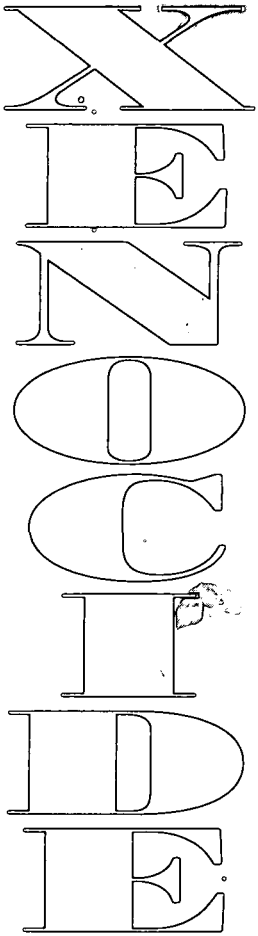
—*The New York Times Book Review*

"Both a gripping tale of adventure in space and a scathing indictment of the militaristic mind."

—*Library Journal*

"...Superb characterization, pacing, and language... a seamless story of compelling power. This is Card at the height of his very considerable powers —a major sf novel by any reasonable standard."

—*Booklist*



Praise for SPEAKER FOR THE DEAD:

"Told with compassion and keen insight, this powerful sequel to *Ender's Game* is highly recommended."

—*Library Journal*

"*Speaker for the Dead* is complex, both in historical perspective and story line. The intricate relationships between the main characters are an integral part of the tale. Card draws us into their lives, giving us insight into their thoughts and feelings and getting us involved in the twists and turns of this very intimate story. It is a great read."

—*U.P.I.*

1985—*ENDER'S GAME*—WINNER OF BOTH THE HUGO- AND NEBULA-AWARDS.
1986—*SPEAKER FOR THE DEAD*—WINNER OF BOTH THE HUGO- AND NEBULA-AWARDS.
NOW, FOR 1991—*XENOCIDE*—THE THIRD BOOK OF ENDER.
ENDER'S GAME (ISBN 0312-93208-1) AND *SPEAKER FOR THE DEAD* (ISBN 0312-93738-5) WILL RETURN IN HANDSOME HARDCOVER EDITIONS, PRINTED ON ACID-FREE PAPER AND REDESIGNED TO CONFORM IN SIZE WITH *XENOCIDE*.

TOR®

TOR®

XENOCIDE (ISBN 0312-85056-5) □ Available in July 1991 □ $21.95
From TOR BOOKS 1991—Our 10th Anniversary Year.

Cathcart, making free with his first name. She knew her worth and how essential she was.

He said, "I don't know. If I did I'd be a backgrounder instead of a lousy director. I only know what I want. You've got to supply it. You've got to supply sinuosity, the impression of scales. Until we get to one point. Notice when Lear says, 'How sharper than a serpent's tooth it is to have a thankless child.' That is *power*. The whole speech leads up to that and it is one of the most famous quotes in Shakespeare. And it is *sibilant*. There is the 'sh,' the three s's in 'serpent's' and in 'thankless' and the two unvoiced 'th's in 'tooth' and 'thankless.' *That* can be hissed. If you keep down the hiss as much as possible in the rest of the speech, you can hiss here, and you should zero in to his face and make it venomous. And for background, the serpent—which, after all, is now referred to in the words—can make its appearance in background. A flash of an open mouth and fangs, fangs— We must have the momentary appearance of fangs as Lear says, 'a serpent's tooth.' "

Willard felt very tired suddenly. "All right. We'll try again tomorrow. I want each one of you to go over the entire scene and try to work out the strategy you intend to use. Only please remember that you are not the only ones involved. What you do must match the others, so I'll encourage you to talk to each other about this—and, most of all, to listen to *me* because I have no instrument to handle and I alone can see the play as a whole. And if I seem as tyrannical as Lear at his worst in spots, well, that's my job."

* * *

Willard was approaching the great storm scene, the most difficult portion of this most difficult play, and he felt wrung out. Lear has been cast out by his daughters into a raging storm of wind and rain, with only his Fool for company, and he has gone almost mad at this mistreatment. To him, even the storm is not as bad as his daughters.

Willard pointed his baton and Lear appeared. A point in another direction and the Fool was there clinging, disregarded, to Lear's left leg. Another point and the background came in, with its impression of a storm, of a howling wind, of driving rain, of the crackle of thunder and the flash of lightning.

The storm took over, a phenomenon of nature, but even as it did so, the image of Lear extended and became what seemed mountain-tall. The storm of his emotions matched the storm of the elements, and his voice gave back to the wind every last howl. His body lost substance and wavered with the wind as though he himself were a storm-cloud, contending on an equal basis with the atmospheric fury. Lear, having failed with his daughters, defied the storm to do its worst. He called out in a voice that was far more than human:

"Blow, winds, and crack your cheeks! rage! blow!
You cataracts and hurricanoes, spout
Till you have drench'd our steeples, drown'd the cocks!
You sulph'rous and thought-executing fires,
Vaunt-couriers to oak-cleaving thunderbolts,
Singe my white head! And thou, all-shaking thunder,

LICENSED TO AINZ.OSG
ELECTRONIC REPRODUCTION PROHIBITED

Strike flat the thick rotundity o' th' world,
Crack Nature's moulds, all germains spill at once,
That make ingrateful man."

The Fool interrupts, his voice shrilling, and making Lear's defiance the more heroic by contrast. He begs Lear to make his way back to the castle and make peace with his daughters, but Lear doesn't even hear him. He roars on:

"Rumble thy bellyful! Spit, fire! spout, rain!
Nor rain, wind, thunder, fire are my daughters.
I tax not you, you elements, with unkindness.
I never gave you kingdom, call'd you children,
You owe me no subscription. Then let fall
Your horrible pleasure. Here I stand your slave,
A poor, infirm, weak, and despis'd old man. . . . "

The Duke of Kent, Lear's loyal servant (though the King in a fit of rage has banished him) finds Lear and tries to lead him to some shelter. After an interlude in the castle of the Duke of Gloucester, the scene returns to Lear in the storm, and he is brought, or rather dragged, to a hovel.

And then, finally, Lear learns to think of others. He insists that the Fool enter first and then he lingers outside to think (undoubtedly for the first time in his life) of the plight of those who are not kings and courtiers.

His image shrank and the wildness of his face smoothed out. His head was lifted to the rain, and his words seemed detached and to be coming not quite from him, as though he were listening to someone else read the speech. It was, after all, not the old Lear speaking, but a new and better Lear, refined and sharpened by suffering. With an anxious Kent watching, and striving to lead him into the hovel, and with Meg Cathcart managing to work up an impression of beggars merely by producing the fluttering of rags, Lear says:

"Poor naked wretches, wheresoe'er you are,
That bide the pelting of this pitiless storm.
How shall your houseless heads and unfed sides,
Your loop'd and window'd raggedness, defend you
From seasons such as these? O, I have ta'en
Too little care of this! Take physic, pomp;
Expose thyself to feel what wretches feel,
That thou mayst shake the superflux to them
And show the heavens more just."

"Not bad," said Wilbur, eventually. "We're getting the idea. Only, Meg, rags aren't enough. Can you manage an impression of hollow eyes? Not blind ones. The eyes are there, but sunken in."

"I think I can do that," said Cathcart.

It was difficult for Willard to believe. The money spent was greater than expected. The time it had taken was considerably greater than had been expected. And the general weariness was far

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

greater than had been expected. Still, the project was coming to an end.

He had the reconciliation scene to get through—so simple that it would require the most delicate touches. There would be no background, no souped-up voices, no images, for at this point Shakespeare became simple. Nothing beyond simplicity was needed.

Lear was an old man, just an old man. Cordelia, having found him, was a loving daughter, with none of the majesty of Goneril, none of the cruelty of Regan, just softly endearing.

Lear, his madness burned out of him, is slowly beginning to understand the situation. He scarcely recognizes Cordelia at first and thinks he is dead and she is a heavenly spirit. Nor does he recognize the faithful Kent.

When Cordelia tries to bring him back the rest of the way to sanity, he says:

"Pray, do not mock me.
I am a very foolish fond old man.
Fourscore and upward, not an hour more nor less,
And, to deal plainly,
I fear I am not in my perfect mind.
Methinks I should know you, and know this man;
Yet I am doubtful; for I am mainly ignorant
What place this is; and all the skills I have
Remembers not these garments; nor I know not
Where I did lodge last night. Do not laugh at me;
For (as I am a man) I think this lady
To be my child Cordelia."

Cordelia tells him she is and he says:

"Be your tears wet? Yes, faith. I pray weep not.
If you have poison for me, I will drink it.
I know you do not love me; for your sisters
Have, as I do remember, done me wrong.
You have some cause, they have not."

All poor Cordelia can say is "No cause, no cause."

And eventually, Willard was able to draw a deep breath and say, "We've done all we can do. The rest is in the hands of the public."

It was a year later that Willard, now the most famous man in the entertainment world, met Gregory Laborian. It had come about almost accidentally and largely because of the activities of a mutual friend. Willard was not grateful.

He greeted Laborian with what politeness he could manage and cast a cold eye on the time-strip on the wall.

He said, "I don't want to seem unpleasant or inhospitable, Mr.—uh—but I'm really a very busy man, and don't have much time."

"I'm sure of it, but that's why I want to see you. Surely, you want to do another compu-drama."

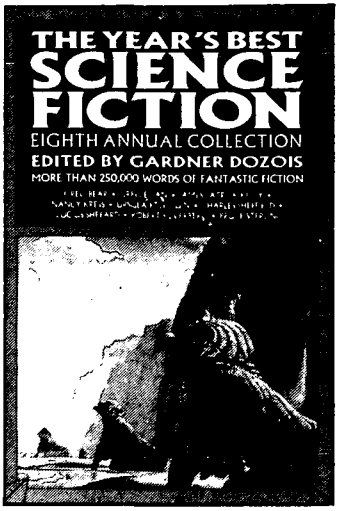
"Surely I intend to, but," and Willard smiled dryly, "*King Lear* is a hard act to follow and I don't intend to turn out something that will seem like trash in comparison."

"But what if you never find anything that can match *King Lear*?"

"I'm sure I never will, but I'll find *something*."

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

This latest in the highly-acclaimed series, the eighth annual collection, features more than 250,000 words of SF by some of the best writers of our times. Two-time Nebula winner Gardner Dozois, editor of *Isaac Asimov's Science Fiction Magazine*, has compiled a breathtaking collection by such writers as **Ursula K. Le Guin • Joe Haldeman • John Brunner • Robert Silverberg • Bruce Sterling • Kate Wilhelm • Terry Bisson • Connie Willis • Lucius Shepard** • and more. In addition you'll find a thorough summation of the year 1990 in science fiction and a comprehensive list of recommended reading. No wonder readers and reviewers agree: **this is the one book no science fiction reader should be without!**



"More so than any other annual anthology series, Dozois' book represents the current state of the genre and the current progress of its leading writers, as much as it showcases individual stories of high merit."—*Locus*

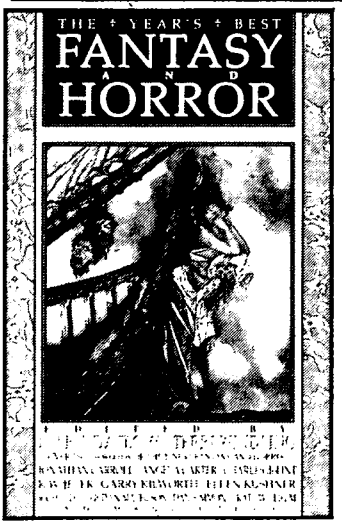
"One of the best buys in the field again this year."
—*Science Fiction Chronicle*

624 pages/$15.95 paperback/$27.95 hardcover

SCIENCE FICTION

THE YEAR'S BEST:

FANTASY & HORROR



The fourth annual collection features a spectacular selection of fantasy and horror writing by the finest writers in the field. Culled from the pages of magazines, anthologies, and small-press publications, the editors have again collected brilliant, gripping tales by such stellar writers as **Jonathan Carroll • Joyce Carol Oates • Peter Straub • John Crowley • R.A. Lafferty • Haruki Murakami • David J. Schow • Ellen Kushner • Lucius Shepard • Jack Womack • Garry Kilworth** • and many others. Boasting more than 200,000 words of fantasy and horror, illuminated with brilliant poems and stories, high fantasy, atmospheric horror, splatterpunk, magic realism, and sparkling examples of the unclassifiable, this is the largest available collection of its kind and no fantasy shelf can be called complete without it.

"This is a gold mine of a book."
—*Thrust Science Fiction and Fantasy*

"Unparalleled....This is a collection to expand your reading tastes if you're at all interested in fantasy or horror."—*Locus*

576 pages/$15.95 paperback/$27.95 hardcover

ST. MARTIN'S PRESS
175 Fifth Ave., New York 10010

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

"I *have* something."

"Oh?"

"I have a story, a novel, that could be made into a compu-drama."

"Oh, well. I can't really deal with items that come in over the transom."

"I'm not offering you something from a slush pile. The novel has been published and it has been rather highly thought of."

"I'm sorry. I don't want to be insulting. But I didn't recognize your name when you introduced yourself."

"Laborian. Gregory Laborian."

"But I still don't recognize it. I never read anything by you. I never heard of you."

Laborian sighed. "I wish you were the only one, but you're not. Still, I could give you a copy of my novel to read."

Willard shook his head. "That's kind of you, Mr. Laborian, but I don't want to mislead you. I have no time to read it. And even if I had the time—I just want you to understand—I don't have the inclination."

"I could make it worth your while, Mr. Willard."

"In what way?"

"I could pay you. I wouldn't consider it a bribe, merely an offer of money that you would well deserve if you worked with my novel."

"I don't think you understand, Mr. Laborian, how much money it takes to make a first-class compu-drama. I take it you're not a multimillionaire."

"No, I'm not, but I can pay you a hundred thousand globo-dollars."

"If that's a bribe, at least it's a totally ineffective one. For a hundred thousand globo-dollars, I couldn't do a single scene."

Laborian sighed again. His large brown eyes looked soulful. "I understand, Mr. Willard, but if you'll just give me a few more minutes—" (for Willard's eyes were wandering to the time-strip again.)

"Well, five more minutes. That's all I can manage really."

"It's all I need. I'm not offering the money for making the compu-drama. You know, and I know, Mr. Willard, that you can go to any of a dozen people in the country and say you are doing a compu-drama and you'll get all the money you need. After *King Lear*, no one will refuse you anything, or even ask you what you plan to do. I'm offering you one hundred thousand globo-dollars for your own use."

"Then it *is* a bribe, and that won't work with me. Good-bye, Mr. Laborian."

"Wait. I'm not offering you an electronic switch. I don't suggest that I place my financial card into a slot and that you do so, too, and that a hundred thousand globo-dollars be transferred from my account to yours. I'm talking *gold*, Mr. Willard."

Willard had risen from his chair, ready to open the door and usher Laborian out, but now he hesitated. "What do you mean, gold?"

"I mean that I can lay my hands on a hundred thousand globo-dollars of gold, about fifteen pounds' worth, I think. I may not be a multi-millionaire, but I'm quite well off and I wouldn't be stealing it. It would be my own money and I am entitled to draw it in gold. There is nothing illegal about it.

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

What I am offering you is a hundred thousand globo-dollars in five-hundred globo-dollar pieces—two hundred of them. *Gold,* Mr. Willard."

Gold! Willard was hesitating. Money, when it was a matter of electronic exchange, meant nothing. There was no feeling of either wealth or of poverty above a certain level. The world was a matter of plastic cards (each keyed to a nucleic acid pattern) and of slots, and all the world transferred, transferred, transferred.

Gold was different. It had a feel. Each piece had a weight. Piled together it had a gleaming beauty. It was wealth one could appreciate and experience. Willard had never even seen a gold coin, let alone felt or hefted one. Two hundred of them!

He didn't need the money. He was not so sure he didn't need the gold.

He said, with a kind of shamefaced weakness. "What kind of a novel is it that you are talking about?"

"Science fiction."

Willard made a face. "I've never read science fiction."

"Then it's time you expanded your horizons, Mr. Willard. Read mine. If you imagine a gold coin between every two pages of the book, you will have your two hundred."

And Willard, rather despising his own weakness, said, "What's the name of your book?"

"*Three in One.*"

"And you have a copy?"

"I-brought one with me."

And Willard held out his hand and took it.

That Willard was a busy man was by no means a lie. It took him better than a week to find the time to read the book, even with two hundred pieces of gold glittering, and luring him on.

Then he sat a while and pondered. Then he phoned Laborian.

The next morning, Laborian was in Williard's office again.

Willard said, bluntly, "Mr. Laborian. I have read your book."

Laborian nodded and could not hide the anxiety in his eyes. "I hope you liked it, Mr. Willard."

Willard lifted his hand and rocked it right and left. "So-so. I told you I have not read science fiction, and I don't know how good or bad it is of its kind—"

"Does it matter, if you liked it?"

"I'm not sure if I liked it. I'm not used to this sort of thing. We are dealing in this novel with three sexes."

"Yes."

"Which you call a Rational, an Emotional, and a Parental."

"Yes."

"But you don't describe them?"

Laborian looked embarrassed. "I didn't describe them, Mr. Willard, because I couldn't. They're alien creatures, really alien. I didn't want to pretend they were alien by simply giving them blue skins or a pair of antennae or a third eye. I *wanted* them indescribable, so I didn't describe them, you see."

"What you're saying is that your imagination failed."

"N-no. I wouldn't say that. It's more like not having that *kind* of imagination. I don't describe anyone. If I were to write a story about you and me, I prob-

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

ably wouldn't bother describing either one of us."

Willard stared at Laborian without trying to disguise his contempt. He thought of himself. Middle-sized, soft about the middle, needed to reduce a bit, the beginnings of a double chin, and a mole on his right wrist. Light brown hair, dark blue eyes, bulbous nose. What was so hard to describe? Anyone could do it. If you had an imaginary character, think of someone real—and describe.

There was Laborian, dark in complexion, crisp curly black hair, looked as though he needed a shave, probably looked that way all the time, prominent Adam's apple, small scar on the right cheek, dark brown eyes rather large, and his only good feature.

Willard said, "I don't understand you. What kind of writer are you if you have trouble describing things? What do you write?"

Laborian said, gently, somewhat as though this was not the first time he had had to defend himself along those lines, "You've read *Three in One*. I've written other novels and they're all in the same style. Mostly conversation. I don't see things when I write; I *hear*, and for most part, what my characters talk about are ideas—competing ideas. I'm strong on that and my readers like it."

"Yes, but where does that leave *me?* I can't devise a compu-drama based on conversation alone. I have to create sight and sound and subliminal messages, and you leave me nothing to work on."

"Are you thinking of doing *Three in One*, then?"

"Not if you give me nothing to work on. Think, Mr. Laborian, think! This Parental. He's the dumb one."

"Not dumb," said Laborian, frowning. "Single-minded. He only has room in his mind for children, real and potential."

"Blockish! If you didn't use that actual word for the Parental in the novel, and I don't remember offhand whether you did or not, it's certainly the impression I got. Cubical. Is that what he is?"

"Well, simple. Straight lines. Straight planes. Not cubical. Longer than he is wide."

"How does he move? Does he have legs?"

"I don't know. I honestly never gave it any thought."

"Hmp. And the Rational. He's the smart one and he's smooth and quick. What is he? Egg-shaped?"

"I'd accept that. I've never given that any thought, either, but I'd accept that."

"And no legs?"

"I haven't described any."

"And how about the middle one. Your 'she' character—the other two being 'he's."

"The Emotional."

"That's right. The Emotional. You did better on her."

"Of course. I did most of my thinking about her. She was trying to save the alien intelligences—us—of an alien world, Earth. The reader's sympathy must be with her, even though she fails."

"I gather she was more like a cloud, didn't have any firm shape at all, could attenuate and tighten."

"Yes, yes. That's exactly right."

LICENSED TO LINZ GRG
ELECTRONIC REPRODUCTION PROHIBITED

"Does she flow along the ground or drift through the air?"

Laborian thought, then shook his head. "I don't know. I would say you would have to suit yourself when it came to that."

"I see. And what about the sex?"

Laborian said, with sudden enthusiasm. "That's a crucial point. I never have any sex in my novels beyond that which is absolutely necessary and then I manage to refrain from describing it—"

"You don't like sex?"

"I like sex fine, thank you. I just don't like it in my novels. Everyone else puts it in and, frankly, I think that readers find its absence in my novels refreshing; at least, my readers do. And I must explain to you that my books do very well. I wouldn't have a hundred thousand dollars to spend if they didn't."

"All right. I'm not trying to put you down."

"However, there are always people who say I don't include sex because I don't know how, so—out of vainglory, I suppose—I wrote this novel just to show that I *could* do it. The entire novel deals with sex. Of course, it's alien sex, not at all like ours."

"That's right. That's why I have to ask you about the mechanics of it. How does it work?"

Laborian looked uncertain for a moment. "They melt."

"I know that that's the word you use. Do you mean they come together? Superimpose?"

"I suppose so."

Willard sighed. "How can you write a book without knowing anything about so fundamental a part of it?"

"I don't have to describe it in detail. The reader gets the impression. With subliminal suggestion so much a part of the compu-drama, how can you ask the question?"

Willard's lips pressed together. Laborian had him there. "Very well. They superimpose. What do they look like after they have superimposed?"

Laborian shook his head. "I avoided that."

"You realize, of course, that I can't."

Laborian nodded. "Yes."

Willard heaved another sigh and said, "Look, Mr. Laborian, assuming that I agree to do such a compu-drama—and I have not yet made up my mind on the matter—I would have to do it entirely my way. I would tolerate no interference from you. You have ducked so many of your own responsibilities in writing the book that I can't allow you to decide suddenly that you want to participate in my creative endeavors."

"That's quite understood, Mr. Willard. I only ask that you keep my story and as much of my dialogue as you can. All of the visual, sonic, and subliminal aspects I am willing to leave entirely in your hands."

"You understand that this is not a matter of a verbal agreement which someone in our industry, about a century and a half ago, described as not worth the paper it was written on. There will have to be a written contract made firm by my lawyers that will exclude you from participation."

"My lawyers will be glad to look over it, but I assure you I am not going to quibble."

"*And*," said Willard severely, "I will want an advance on the money you

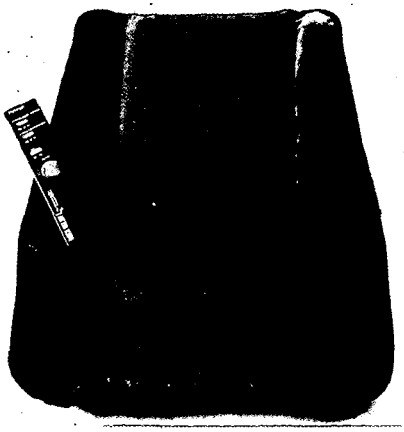
LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

MAIL ★ ORDER ★ MALL

▼ THE MAGICAL SPARE BED

It's almost like pulling an extra bed out of a hat. Unlike most spare beds that gobble up storage space and are unwieldy to move, this one rolls down to fit a 36"-long, 3"-diameter canvas case, to stash in a closet corner, car trunk, camper, anywhere. Yet it unrolls in minutes to a full-size 27" x 73" bed that will even accommodate 6-footers, supports up to 500 pounds and is comfortable to boot. The secret's in the inventive construction: a cotton canvas sling is supported on laminated steel legs with 6 steel springs for cushioning and stability on rough ground. Toss the carrying strap over your shoulder and go — camping, beach, poolside; the 10" legs keep it off damp ground and sand. Of course, this bed is indispensable at home, country home, dorm — even for kids in motel rooms. A superb value at **$61.98** ($12.25) #A1931.

▼ BACK RELIEF BY POLLENEX

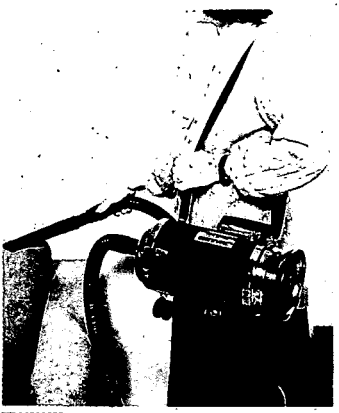


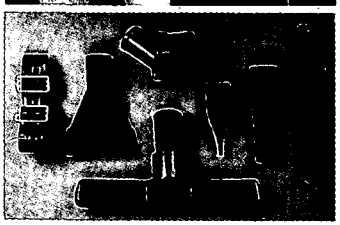
Are you one of the millions of Americans who suffers from low back pain? Do hours of prolonged sitting leave you aching or numb? If so, then the Pollenex Back Relief is just what the doctor ordered. Back Relief's unique design cradles your back in comfort and features multiple combinations of massage and heat. The inflatable lumbar cushion conforms to the shape of your back. Dual massaging elements can be used separately or together for full back massage. Handy remote control lets you select upper/lower massage, low and high intensity as well as heat control. And the soothing massager works 2 ways - adapter #1 plugs into any indoor electrical outlet while adapter #2 plugs into car, van, or truck cigarette lighter. So Back Relief is perfect for car, home, or office. Plush, durable fabric cover adds extra comfort. **$119.98** ($6.75) #A2001.

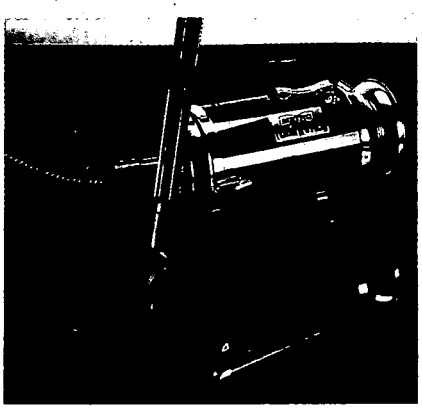
LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

▼ OMNIVAC®: POWERFUL, PORTABLE, & PRICED TO PLEASE!

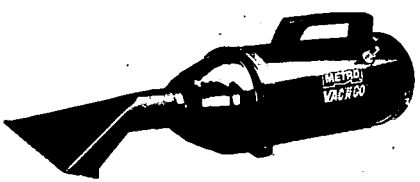
The Omnivac® by Metro® is the portable canister vacuum cleaner/blower that simply blows away the competition. So compact (17 inches x 7 inches) and weighing only 11 pounds, it is a homemaker's dream. But don't let the compact size and portability fool you! The Omnivac® features an all-steel body and packs a full 4.0 peak h.p. 2-speed motor for incredible suction and deep cleaning power that is far superior to most ordinary vacuums. The turbo-driven powerhead attachment features a high speed rotating brush that removes ground-in carpet dirt as effectively as bulky upright models. Plus, its double swivel neck gets into tight spots under furniture and in corners. But it doesn't stop here! A reversible air blower provides 200 mph power for sweeping garages, patios, and walkways—and it inflates inflatables too. The Omnivac® can be carried easily over your shoulder with the comfortable shoulder strap or it can roll along effortlessly on its swivel caster wheels. The full-featured 10-piece accessory kit comes with a 6 foot hose, 2 extension wands, bi-turbo powerhead, nozzle, crevice tool, dust brush, floor/wall brush, inflator, powerizer, and shoulder strap. UL approved and made in the USA. And . . . as if the Omnivac® weren't enough, we are pleased to offer **ABSOLUTELY FREE** with your order, the Vac 'N' Go, (a $40 value) the high performance ½ horsepower electric hand vacuum. Ideal for quick clean-ups around the house, office, workshop, or in the car, RV, or boat. Includes 110 volt power unit and Pik-all nozzle. Omnivac® attachments will also fit the Vac 'N' Go. Full one year warranty. TWO GREAT VACUUMS — FOR ONE LOW PRICE! Who can resist an offer like this??? **$199.98** ($20.00) #A1996.







▲ **BI-TURBO BRUSH**



ABSOLUTELY FREE WITH ORDER!

FOR ORDERING INFORMATION SEE BACK COVER.

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

offered me. I can't afford to have you change your mind on me and I am not in the mood for a long lawsuit."

At this, Laborian frowned. He said, "Mr. Willard, those who know me *never* question my financial honesty. You don't know me so I'll permit the remark, but please don't repeat it. How much of an abvance do you wish?"

"Half," said Willard, briefly.

Laborian said, "I will do better than that. Once you have obtained the necessary commitments from those who will be willing to put up the money for the compu-drama and once the contract between us is drawn up, then I will give you every cent of the hundred thousand dollars even before you begin the first scene of the book."

Willard's eyes opened wide and he could not prevent himself from saying, "Why?"

"Because I want to urge you on. What's more, if the compu-drama turns out to be too hard to do, if it won't work, or if you turn out something that will not do—my hard luck—you can keep the hundred thousand. It's a risk I'm ready to take."

"Why? What's the catch?"

"No catch. I'm gambling on immortality. I'm a popular writer but I have never heard anyone call me a great one. My books are very likely to die with me. Do *Three in One* as a compu-drama and do it well and that at least might live on, and make my name ring down through the ages," he smiled ruefully, "or at least some ages. However—"

"Ah," said Willard. "Now we come to it."

"Well, yes. I have a dream that I'm willing to risk a great deal for, but I'm not a complete fool. I will give you the hundred thousand I promised before you start and if the thing doesn't work out you can keep it, but the payment will be electronic. *If*, however, you turn out a product that satisfies me, then you will return the electronic gift and I will give you the hundred thousand globo-dollars in gold pieces. You have nothing to lose except that to an artist like yourself, gold must be more dramatic and worthwhile than blips in a finance-card." And Laborian smiled gently.

Willard said, "Understand, Mr. Laborian! I would be taking a risk, too. I risk losing a great deal of time and effort that I might have devoted to a more likely project. I risk producing a docu-drama that will be a failure and that will tarnish the reputation I have built up with *Lear*. In my business, you're only as good as your most recent product. I will consult various people—"

"On a confidential basis, please."

"Of course! And I will do a bit of deep consideration. I am willing to go along with your proposition for now, but you mustn't think of it as a definite commitment. Not yet. We will talk further."

Jonas Willard and Meg Cathcart sat together over lunch in Meg's apartment. They were at their coffee when Willard said, with apparent reluctance as one who broaches a subject he would rather not, "Have you read the book?"

"Yes, I have."

"And what did you think?"

"I don't know," said Cathcart peering at him from under the dark, reddish hair she wore clustered over her forehead. "At least not enough to judge."

LICENSED TO UIUZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

"You're not a science fiction buff, either, then?"

"Well, I've read science fiction, mostly sword and sorcery, but nothing like *Three in One*. I've heard of Laborian, though. He does what they call 'hard science fiction.' "

"It's hard enough. I don't see how I can do it. That book, whatever its virtues, just isn't me."

Cathcart fixed him with a sharp glance. "How do you know it isn't you?"

"Listen, it's important to know what you can't do."

"And you were born knowing you can't do science fiction?"

"I have an instinct in these things."

"So you say. Why don't you think what you might do with those three undescribed characters, and what you would want subliminally, before you let your instinct tell you what you can and can't do. For instance, how would you do the Parental, who is referred to constantly as 'he' even though it's the Parental who bears the children? That struck me as jackassy, if you must know."

"No, no," said Willard, at once. "I accept the 'he.' Laborian might have invented a third pronoun, but it would have made no sense and the reader would have gagged on it. Instead, he reserved the pronoun, 'she,' for the Emotional. She's the central character, differing from the other two enormously. The use of 'she' for her and only for her focuses the reader's attention on her, and it's on her that the reader's attention *must* focus. What's more, it's on her that the viewer's attention *must* focus in the compu-drama."

"Then you *have* been thinking of it." She grinned, impishly. "I wouldn't have known if I hadn't needled you."

Willard stirred uneasily, "Actually, Laborian said something of the sort, so I can't lay claim to complete creativity here. But let's get back to the Parental. I want to talk about these things to you because everything is going to depend on subliminal suggestion, if I do try to do this thing. The Parental is a block, a rectangle."

"A right parallelepiped, I think they would call it in solid geometry."

"Come on. I don't care what they call it in solid geometry. The point is we can't just have a block. We have to give it personality. The Parental is a 'he' who bears children, so we have to get across an epicene quality. The voice has to be neither clearly masculine nor feminine. I'm not sure that I have in mind exactly the timbre and sound I will need, but that will be for the voice-recorder and myself to work out by trial and error, I think. Of course, the voice isn't the only thing."

"What else?"

"The feet. The Parental moves about, but there is no description of any limbs. He has to have the equivalent of arms; there are things he does. He obtains an energy source that he feeds the Emotional, so we'll have to evolve arms that are alien but that are arms. And we need legs. And a number of sturdy, stumpy legs that move rapidly."

"Like a caterpillar? Or a centipede?"

Willard winced. "Those aren't pleasant comparisons, are they?"

"Well, it would be my job to subliminate, if I may use the expression, a centipede, so to speak, without showing

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

one. Just the notion of a series of legs, a double fading row of parentheses, just on and off as a kind of visual leitmotiv for the Parental, whenever he appears."

"I see what you mean. We'll have to try it out and see what we can get away with. The Rational is ovoid. Laborian admitted it might be egg-shaped. We can imagine him progressing by rolling but I find that completely inappropriate. The Rational is mind-proud, dignified. We can't make him do anything laughable, and rolling would be laughable."

"We could have him with a flat bottom slightly curved, and he could slide along it, like a penguin belly-whopping."

"Or like a snail on a layer of grease. No. That would be just as bad. I had thought of having three legs extrude. In other words, when he is at rest, he would be smoothly ovoid and proud of it, but when he is moving three stubby legs emerge and he can walk on them."

"Why three?"

"It carries on the three-motif; three sexes, you know. It could be a kind of hopping run. The foreleg digs in and holds firm and the two hind legs come along on each side."

"Like a three-legged kangaroo?"

"Yes! Can you subliminate a kangaroo?"

"I can try."

"The Emotional, of course, is the hardest of the three. What can you do with something that may be nothing but a coherent cloud of gas?"

Cathcart considered, "What about giving the impression of draperies containing nothing. They would be moving about wraithlike, just as you presented *Lear* in the storm scene. She would be wind, she would be air, she would be the filmy, foggy draperies that would represent that."

Willard felt himself drawn to the suggestion. "Hey, that's not bad, Meg. For the subliminal effect, could you do Helen of Troy?"

"Helen of Troy?"

"Yes! To the Rational and Parental, the Emotional is the most beautiful thing ever invented. They're crazy about her. There's this strong, almost unbearable sexual attraction—their kind of sex—and we've got to make the audience aware of it in *their* terms. If you can somehow get across a statuesque Greek woman, with bound hair and draperies—the draperies would exactly fit what we're imagining for the Emotional—and make it look like the paintings and sculptures everyone is familiar with, that would be the Emotional's leitmotiv."

"You don't ask simple things. The slightest intrusion of a human figure will destroy the mood."

"You don't intrude a human figure. Just the suggestion of one. It's important. A human figure, in actual fact, may destroy the mood, but we'll have to *suggest* human figures throughout. The audience has to think of these odd things as human beings. No mistake."

"I'll think about it," said Cathcart, dubiously.

"Which brings us to another thing. The melting. The triple-sex of these things. I gather they superimpose. I gather from the book that the Emotional is the key to that. The Parental and Rational can't melt without her. She's the essential part of the process. But, of course, that fool, Laborian, doesn't de-

LICENSED TO GALE/CENGAGE
ELECTRONIC REPRODUCTION PROHIBITED

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

scribe it in detail. Well, we can't have the Rational and Parental running toward the Emotional and jumping on her. That would kill the drama at once no matter what else we might do."

"I agree."

"What we must do, then, and this is off the top of my head, is to have the Emotional expand, the draperies move out and enswathe (if that's the word) both Parental and Rational. They are obscured by the draperies and we don't see exactly how its done but they get closer and closer until they superimpose."

"We'll have to emphasize the drapery," said Cathcart. "We'll have to make it as graceful as possible in order to get across the beauty of it, and not just the eroticism. We'll have to have music."

"*Not* the Romeo and Juliet overture, please. A slow waltz, perhaps, because the melting takes a long time. And not a familiar one. I don't want the audience humming along with it. In fact, it would be best if it comes in occasional bits so that the audience gets the impression of a waltz, rather than actually hearing it."

"We can't see how to do it, until we try it and see what works."

"Everything I say now is a first-order suggestion that may have to be yanked about this way and that under the pressure of actual events. And what about the orgasm? We'll have to indicate that somehow."

"Color."

"Hmm."

"Better than sound, Jonas. You can't have an explosion. I wouldn't want some kind of eruption, either. Color. Silent color. That might do it."

"What color? I don't want a blinding flash, either."

"No. You might try a delicate pink, very slowly darkening, and then toward the end suddenly becoming a deep, deep red."

"I'm not sure. We'll have to try it out. It must be unmistakeable and moving and not make the audience giggle or feel embarrassed. I can see ourselves running through every color change in the spectrum, and, in the end, find that it will depend on what you do subliminally. And that brings us to the triple-beings."

"The what?"

"You know. After the last melting, the superimposition remains permanent and we have the adult form that is all three components together. There, I think, we'll have to make them more human. Not human, mind you. Just more human. A faint suggestion of human form, not just subliminal, either. We'll need a voice that is somehow reminiscent of all three, and I don't know how the recorder can make that work. Fortunately, the triple-beings don't appear much in the story."

Willard shook his head. "And that brings us to the rough fact that the compu-drama might not be a possible project at all."

"Why not? You seem to have been offering potential solutions of all kinds for the various problems."

"Not for the essential part. Look! In *King Lear*, we had human characters, *more* than human characters. You had searing emotions. What have we got here? We have funny little cubes and ovals and drapery. Tell me how my

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

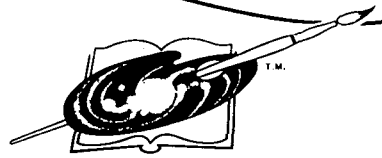
L. Ron Hubbard's
Writers of The Future® Contest

AN INTERNATIONAL SEARCH FOR NEW AND AMATEUR WRITERS OF NEW SHORT STORIES OR NOVELETS OF SCIENCE FICTION OR FANTASY

No Entry Fee *Entrants Retain All Rights*

- *All Awards Adjudicated by Professional Writers only. Algis Budrys, Co-ordinating Judge*
- *Prizes Every Three Months: $1000, $750, $500*
- *Annual Grand Prize: $4000 ADDITIONAL!*

For Contest rules, send an SASE to: ***L. Ron Hubbard's Writers of The Future Contest***
P.O. Box 1630
Los Angeles, CA 90078



L. Ron Hubbard's
ILLUSTRATORS OF THE FUTURE™ CONTEST

OPEN TO NEW SCIENCE FICTION AND FANTASY ARTISTS WORLDWIDE

No Entry Fee *Entrants Retain All Rights*

- *All Judging by Professional Artists Only Frank Kelly-Freas, Co-ordinating Judge*
- *$1500 in Prizes Each Quarter*
- *Quarterly Winners compete for $4,000 additional ANNUAL PRIZE*

For Contest rules, send an SASE to: ***L. Ron Hubbard's Illustrators of The Future Contest***
P.O. Box 3190
Los Angeles, CA 90078

Copyright © 1990 L. Ron Hubbard Library. All rights reserved. WRITERS OF THE FUTURE, ILLUSTRATORS OF THE FUTURE and their logos are trademarks owned by L. Ron Hubbard Library and are used with its approval.

ELECTRONIC REPRODUCTION PROHIBITED
LICENSED TO UNZ.ORG

Three in One is going to be different from an animated cartoon?"

"For one thing, an animated cartoon is two-dimensional. Even with elaborate animation it is flat, and its coloring is without shading. It is invariably satirical—"

"I know all that. That's not what I want you to tell me. You're missing the important point. What a compu-drama has, that a mere animated cartoon does not, are subliminal suggestions such as can only be created by a complex computer in the hands of an imaginative genius. What my compu-drama has that an animated cartoon doesn't is *you*, Meg."

"Well, I was being modest."

"Don't be. I'm trying to tell you that everything—*everything*—is going to depend on you. We have a story here that is dead serious. Our Emotional is trying to save Earth out of pure idealism; it's not her world. And she doesn't succeed, and she won't succeed in my version, either. No cheap, happy ending."

"Earth isn't exactly destroyed."

"No, it isn't. There's still time to save it if Laborian ever gets around to doing a sequel, but in *this* story the attempt fails. It's a tragedy and I want it treated as one—as tragic as *Lear*. No funny voices, no humorous actions, no satirical touches. Serious. Serious. Serious. And I'm going to depend on you to make it so. It will be you who makes sure that the audience reacts to the Rational, the Emotional, the Parental, as though they were human beings. All their peculiarities will have to melt away and they'll have to be recognized as intelligent beings on a par with humanity, if not ahead of it. Can you do it?"

Cathcart said dryly, "It looks as though you will insist I can."

"I do so insist."

"Then you had better see about getting the ball rolling, and you leave me alone while you're doing it. I need time to think. Lots of time."

The early days of the shooting were an unmitigated disaster. Each member of the crew had his copy of the book; carefully, almost surgically trimmed; but with no scenes entirely omitted.

"We're going to stick to the course of the book as closely as we can, and improve it as we go along just as much as we can," Willard had announced confidently. "And the first thing we do is get a hold on the triple-beings."

He turned to the head voice-recorder, "How have you been working on that?"

"I've tried to fuse the three voices."

"Let's hear. All right, everyone quiet."

"I'll give you the Parental first," said the recorder. There came a thin, tenor voice, out of key with the blockish figure that the Image man had produced. Willard winced slightly at the mismatch, but the Parental *was* mismatched—a masculine mother. The Rational, rocking slowly back and forth, had a somewhat self-important voice; enunciation over-careful, and it was a light baritone.

Willard interrupted. "Less rocking in the Rational. We don't want the audience to become seasick. He rocks when he is deep in thought, and not all the time."

He then nodded his head at Dua's draperies, which seemed quite success-

LICENSED TO NIZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

ful, as did her clear and infinitely sweet soprano voice.

"She must never shriek," said Willard, severely, "not even when she is in a passion."

"She won't," said the recorder. "The trick is, though, to blend the voices in setting up the triple-being, in having each one distantly identifiable."

All three voices sounded softly, the words not clear. They seemed to melt into each other and then the voice could be heard enunciating.

Willard shook his head in immediate discontent. "No, that won't do at all. We can't have three voices in a kind of intimate patchwork. We'd be making the triple-being a figure of fun. We need one voice which somehow suggests all three."

The voice-recorder was clearly offended. "It's easy to say that. How do you suggest we do it?"

"I do it," said Willard, brutally, "by ordering you to do it. I'll tell you when you have it. And Cathcart—where is Cathcart?"

"Here I am," she said, emerging from behind her instrumentation. "Where I'm supposed to be."

"I don't like the sublimination, Cathcart. I gather you tried to give the impression of cerebral convolutions."

"For intelligence. The triple-beings represent the intelligence-peak of these aliens."

"Yes, I understand, but what you managed to do was to give the impression of worms. You'll have to think of something else. And I don't like the appearance of the triple-being, either. He looks just like a big Rational."

"He *is* like a big Rational," said one of the imagists.

"Is he described in the book that way?" asked Willard, sharply.

"Not in so many words, but the impression I get—"

"Never mind your impression. I'll make the decisions."

Willard grew fouler-tempered as the day wore on. At least twice he had difficulty controlling his passion, the second time coming when he happened to notice someone watching the proceedings from a spot at one edge of the lot.

He strode toward him angrily. "What are you doing here?"

It was Laborian, who answered quietly. "Watching."

"Our contract states—"

"That I am to interfere in the proceedings in no way. It does not say I cannot watch quietly."

"You'll get upset if you do. This is the way preparing a compu-drama works. There are lots of glitches to overcome and it would be upsetting to the company to have the author watching and disapproving."

"I'm not disapproving. I'm here only to answer questions if you care to ask them."

"Questions? What kind of questions?"

Laborian shrugged. "I don't know. Something might puzzle you and you might want a suggestion."

"I see," said Willard, with heavy irony, "so you can teach me my business."

"No, so I can answer your questions."

"Well, I have one."

"Very well," and Laborian produced

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

a small cassette recorder. "If you'll just speak into this and say that you are asking me a question and wish me to answer without prejudicing the contract, we're in business."

Willard paused for a considerable time, staring at Laborian as though he suspected trickery of some sort, then he spoke into the cassette.

"Very well," said Laborian. "What's your question?"

"Did you have anything in mind for the appearance of the triple-being in the book?"

"Not a thing," said Laborian, cheerfully.

"How could you do that?" Willard's voice trembled as though he were holding back a final "you idiot" by main force.

"Easily. What I don't describe, the reader supplies in his own mind. Each reader does it differently to suit himself, I presume. That's the advantage of writing. A compu-drama would have an enormously larger audience than a book could have, but you must pay for that by having to present an image."

"I understand that," said Willard. "So much for the question, then."

"Not at all. I have a suggestion."

"Like what?"

"Like a head. Give the triple-being a head. The Parental has no head, nor the Rational, nor the Emotional, but all three look up to the triple-beings as creatures of intelligence beyond their own. That is the entire difference between the triple-beings and the three Separates. Intelligence."

"A head?"

"Yes. We associate intelligence with heads. The head contains the brain, it contains the sense-organs. Omit the head and we cannot believe in intelligence. The headless oysters or clams are mollusks that seem no more intelligent to us than a sprig of grass would be, but the related octopus, also a mollusk, we accept as possibly intelligent because it has a head—and eyes. Give the triple-being eyes, too."

Work had, of course, ceased on the set. Everyone had gathered in as closely as they thought judicious to listen to the conversation between director and author.

Willard said, "What kind of head?"

"Your choice. All you need is a bulge *suggesting* a head. And eyes. The viewer is sure to get the idea."

Willard turned away, shouting, "Well, get back to work. Who called a vacation? Where are the imagists? Back to the machine and begin trying out heads."

He turned suddenly and said, in an almost surly fashion, to Laborian. "Thank you!"

"Only if it works," said Laborian, shrugging.

The rest of the day was spent in testing heads, searching for one that was not a humorous bulge, and not an unimaginative copy of the human head, and eyes that were not astonished circles or vicious slits. Then, finally, Willard called a halt and growled, "We'll try again tomorrow. If anyone gets any brilliant thoughts overnight, give them to Meg Cathcart. She'll pass on to me any that are worth it." And he added, in an annoyed mutter, "I suppose she'll have to remain silent."

Willard was right and wrong. He was right. There were no brilliant ideas

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

DO YOU WANT TO BE A SCIENCE FICTION WRITER?

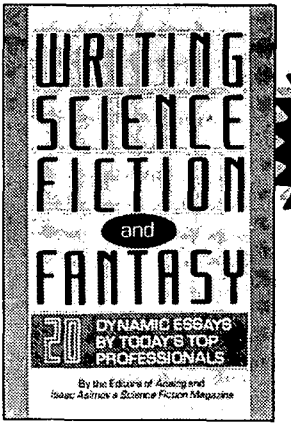
Presenting: **WRITING SCIENCE FICTION AND FANTASY**

From The Editors Of

SCIENCE FICTION **analog** SCIENCE FACT®

and

ISAAC ASIMOV'S SCIENCE FICTION MAGAZINE



SAVE OVER 25%

The inside tips and trade secrets of todays foremost professionals: **ISAAC ASIMOV** on *New Writers*, *Dialog*, and *Revisions* . . . **ROBERT A. HEINLEIN** on *Writing Speculative Fiction*. . . . **POUL ANDERSON** on *Imaginary Worlds*, **CONNIE WILLIS** on *Comedy*. . . . **NORMAN SPINRAD** on *Far, Far Futures*. . . . **JANE YOLEN** on *Fantasy* . . . **JAMES PATRICK KELLY** on *Characterization* . . . **AND MUCH MORE!**

Buy from the editors directly and save over **25%** off the ***$18.95*** cover price!

☐ Please send me **WRITING SCIENCE FICTION AND FANTASY**, I've enclosed my check for ***$13.95*** (plus $3.00 for postage and handling)

☐ Please charge my ☐ Visa ☐ MasterCard ☐ American Express

My card #_____

Exp. date_____

NAME_____

ADDRESS_____

CITY_____ STATE____ ZIP_____

M3WG-9

Mail To: Science Fiction Manual
P.O. Box 40
Vernon, N.J. 07462

Books will be shipped by UPS.
Please allow 2-3 weeks for delivery.

OUTSIDE US & POSS ADD $12.00 PRICE INCLUDES GST
ALSO AVAILABLE AT YOUR LOCAL BOOKSTORE.

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

handed to him, but he was wrong for he had one of his own.

He said to Cathcart, "Listen, can you get across a top hat?"

"A what?"

"The sort of thing they wore in Victorian times. Look, when the Parental invades the lair of the triple-beings to steal an energy source, he's not an impressive sight in himself, but you told me you could just get across the idea of a helmet and a long line that will give the notion of a spear. He'll be on a knightly quest."

"Yes, I know," she said. "but it might not work. We'll have to try it out."

"Of course, but that points the direction. If you have just a suggestion of a top hat, it will give the impression of the triple-being as an aristocrat. The exact shape of the head and eyes becomes less crucial in that case. Can it be done?"

"Anything can be done. The question is: will it work?"

"We'll try it."

And as it happened, one thing led to another. The suggestion of the top hat caused the voice recorder to say, "Why not give the triple-being a British accent?"

Willard was caught off-guard. "Why?"

"Well, the British have a language with more tones than we do. At least, the upper classes do. The American version of English tends to be flat, and that's true of the Separates, too. If the triple-being spoke British rather than English, his voice could rise and fall with the words—tenor and baritone and even an occasional soprano squeak. That's what we would want to indicate with the three voices out of which his voice was formed."

"Can you do that?" said Willard.

"I think so."

"Then we'll try. Not bad—if it works."

It was interesting to see how the entire group found themselves engaged in the Emotional.

The scene in particular where the Emotional was fleeing across the face of the planet, where she had her brief set-to with the other Emotionals caught at everyone.

Willard said tensely, "This is going to be one of the great dramatic scenes. We'll put it out as widely as we can. It's going to be draperies, draperies, draperies, but they must not be entangled one with the other. Each one must be distinct. Even when you rush the Emotionals in toward the audience I want each set of draperies to be a different off-white. And I want Dua's drapery to be distinct from all of them. I want her to glitter a little, just to be different, and because she's *our* Emotional. Got it?"

"Got it," said the leading imagist. "We'll handle it."

"And another thing. All the other Emotionals twitter. They're birds. Our Emotional *doesn't* twitter, and she despises the rest because she's more intelligent than they are and she knows it. And when she's fleeing—" he paused, and brooded a bit, "Is there any way we can get away from the *Ride of the Valkyrie?*"

"We don't want to," said the sound-

LICENSED TO AINZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

man promptly. "Nothing better for the purpose has ever been written."

Cathcart said, "Yes, but we'll only have snatches of it now and then. Hearing a few bars has the effect of the whole, and I can insert the hint of tossing manes."

"Manes?" said Willard, dubiously.

"Absolutely. Three thousand years of experience with horses has pinned us down to the galloping stallion as the epitome of wild speed. All our mechanical devices are too static, however fast they go. And I can arrange to have the manes just match, emphasize, and punctuate the flowing of the draperies."

"That sounds good. We'll try it."

Willard knew where the final stumbling block would be found. The last melting. He called the troupe together to lecture them, partly to make sure they understood what it was they were all doing now, partly to put off the time of reckoning when they would actually try to put it all into sound, image, and sublimination.

He said, "All right, the Emotional's interest is in saving the other world—Earth—only because she can't bear the thought of the meaningless destruction of intelligent beings. She knows the triple-beings are carrying through a scientific project, necessary for the welfare of *her* world and caring nothing for the danger into which it puts the alien world—us.

"She tries to warn the alien world and fails. She knows, at last, that the whole purpose of melting is to produce a new set of Rational, Emotional and Parental, and then, with that done, there is a final melting that would turn the original set into a triple-being. Do you have that? It's a sort of larval form of Separates and an adult form of triples.

"But the Emotional doesn't want to melt. She doesn't want to produce the new generation. Most of all, she doesn't want to become a triple-being and participate in what she considers their work of destruction. She is, however, tricked into the final melt and realizes too late that she is not only going to be a triple-being but a triple-being who will be, more than any other, responsible for the scientific project that will destroy the other world.

"All this Laborian could describe in words, words, words, in his book, but we've got to do it more immediately and more forcefully, in images and sublimination as well. That's what we're now going to try to do."

They were three days in the trying, before Willard was satisfied.

The weary Emotional, uncertain, stretching outward, with Cathcart's sublimination instilling the feeling of not-sure, not-sure. The Rational and Parental enfolded and coming together, more rapidly than on previous occasions—hurrying for the superimposition before it might be stopped—and the Emotional realizing too late the significance of it all and struggling—struggling—

And failure. The drenching feeling of failure as a new triple-being stepped out of the superimposition, more nearly human than anyone else in the compu-drama—proud, indifferent.

The scientific procedure would go on. Earth would continue the downward slide.

And somehow this was it—this was the nub of everything that Willard was

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

trying to do—that within the new triple-being the Emotional still existed in part. There was just the wisping of drapery and the viewer was to know that the defeat was not final after all.

The Emotional would, somehow, still try, lost though it was in a greater being.

They watched the completed compu-drama, all of them, seeing it for the first time as a whole and not as a collection of parts, wondering if there were places to edit, to reorder. (Not now, thought Willard, not now. Afterwards, when he had recovered and could look at it more objectively.)

He sat in his chair, slumped. He had put too much of himself into it. It had seemed to him that it contained everything he wanted it to contain; that it did everything he wanted to have done; but how much of that was merely wishful thinking?

When it was over and the last tremulous, subliminal cry of the defeated-but-not-yet-defeated Emotional faded, he said, "Well."

And Cathcart said, "That's almost as good as your *King Lear* was, Jonas."

There was a general murmur of agreement and Willard cast a cynical eye about him. Wasn't that what they would be bound to say, no matter what?

His eye caught that of Gregory Laborian. The writer was expressionless, said nothing.

Willard's mouth tightened. There at least he could expect an opinion that would be backed, or not backed, by gold. Willard had his hundred thousand. He would see now whether it would stay electronic.

He said, and his own uncertainty made him sound imperious, "Laborian. I want to see you in my office."

They were together alone for the first time since well before the compu-drama had been made.

"Well?" said Willard. "What do you think, Mr. Laborian?"

Laborian smiled. "That woman who runs the subliminal background told you that it was almost as good as your *King Lear* was, Mr. Willard."

"I heard her."

"She was quite wrong."

"In your opinion?"

"Yes. My opinion is what counts right now. She was quite wrong. Your *Three in One* is much better than your *King Lear*."

"Better?" Willard's weary face broke into a smile.

"Much better. Consider the material you had to work with in doing *King Lear*. You had William Shakespeare, producing words that sang, that were music in themselves; William Shakespeare producing characters who, whether for good or evil, whether strong or weak, whether shrewd or foolish, whether faithful or traitorous, were all larger than life; William Shakespeare, dealing with two overlapping plots, reinforcing each other and tearing the viewers to shreds.

"What was your contribution to *King Lear*? You added dimensions that Shakespeare lacked the technological knowledge to deal with; that he couldn't dream of; but the fanciest technologies and all that your people and your own talents could do could only build somewhat on the greatest literary genius of

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

OVER 50% OFF DURING OUR FIRST ANTHOLOGY WAREHOUSE SALE!

Our warehouse is full -- full of classic science fiction anthologies from **Analog Science Fiction/Science Fact and Isaac Asimov's Science Fiction Magazines** We need to make room for new books -- that's why we're having our first anthology warehouse sale. For only $19.95 plus postage and handling, we will send you an assortment of 10 classic science fiction anthologies. That's less than $2.00 a book and less than half the original price.

Please send your check or money order (no COD's please) to:

Anthology Warehouse Sale
Davis Publications, Inc.
P.O. Box 40
Vernon, NJ 07462

Please send me

___ An assortment of 10 classic science fiction anthologies ($19.95 plus $3.00 postage and handling)

Please send to:

Name_____

Address_____

City_____ ST_____ Zip_____

While we cannot accommodate requests for specific anthologies, we guarantee that you will be delighted with your surprise assortment. Also, at this great price, these anthologies will make wonderful gifts for your science-fiction-loving friends.

Allow 6-8 weeks for delivery. Available only in U.S.

M3GG-8

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

all time, working at the peak of his power.

"But in *Three in One,* Mr. Willard, you were working with *my* words which didn't sing; *my* characters, which weren't great; *my* plot which tore at no one. You dealt with *me*, a run-of-the-mill writer and you produced something great, something that will be remembered long after I am dead. One book of mine, anyway, will live on because of what you have done.

"Give me back my electronic hundred thousand, Mr. Willard, and I will give you this."

The hundred thousand was shifted back from one financial card to the other and, with an effort, Laborian then pulled his fat briefcase on to the table and opened it. From it, he drew out a box, fastened with a small hook. He unfastened it carefully, and lifted the top. Inside it glittered the gold pieces, each one marked with the planet Earth, the western hemisphere on one side, the eastern on the other. Large gold pieces, two hundred of them, each worth five hundred globo-dollars.

Willard, awed, plucked out one of the gold pieces. It weighed about one and a quarter ounces. He threw it up in the air and caught it.

"Beautiful," he said.

"It's yours, Mr. Willard," said Laborian. "Thank you for doing the compu-drama for me. It is worth every piece of that gold."

Willard stared at the gold and said, "You made me do the compu-drama of your book with your offer of this gold. To get this gold, I forced myself beyond my talents. Thank you for that, and you are right. It was worth every piece of that gold."

He put the gold piece back in the box and closed it. Then he lifted the box and handed it back to Laborian. ■

●Rail travel at high speed is not possible because passengers, unable to breathe, would die of asphyxia.

Dr. Dionysus Lardner (1793-1859), Professor of Natural Philosophy and Astronomy at University College, London.

LICENSED TO UNLOCUS
ELECTRONIC REPRODUCTION PROHIBITED

Kevin J. Anderson

BEATING WARHEADS INTO PLOWSHARES

The quote from Isaiah says, "they shall beat their swords into plowshares." Just imagine the plowshares you could make if your sword is an entire nuclear arsenal.

During a period from 1957 until about 1974, a research group at the Lawrence Radiation Laboratory (currently, the Lawrence Livermore National Laboratory) near San Francisco, California, studied ways to use underground detonations of nuclear warheads for peacetime purposes. Some of the schemes proposed were for excavating major canals and roadbeds, creating new reservoirs and shaping harbors, exploiting

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

difficult-to-reach mineral and natural gas deposits, and even making parabolic craters for radio-telescope construction.

Ever since the 1938 discovery of nuclear fission by Otto Hahn, Fritz Strassman, and Lise Meitner, scientists have been questioning the ultimate use of nuclear research. During World War II, some of the Manhattan Project physicists developing the atomic bomb resented that their work would be used only for destruction. A dissenting group of such physicists authored a petition outlining their objections and addressing certain non-military applications of nuclear explosions.

The petition reads, in part: "As soon as the potentialities of nuclear weapons are revealed to the American people . . . the accumulation of explosive material at present earmarked for potential military use will become available for important peacetime development, including power production, large engineering undertakings, and mass production of radioactive materials. In this way, the money spent on wartime development of nucleonics may become a boon for the peacetime development of national economy."

After the two atomic bombs had been dropped on Hiroshima and Nagasaki in 1945, Congress passed the Atomic Energy Act (amended in 1954). The AEA indicated two objectives for the testing of nuclear explosives: to maintain the nation's security, and to develop peaceful applications of nuclear explosives for the benefit of all mankind.

But how could an atomic bomb be used to *benefit* all mankind?

The first scheme came about after the autumn of 1956, when Egypt blockaded the Suez Canal. At California's Lawrence Radiation Laboratory, discussions of the Suez Canal crisis pointed to the need for a second canal through friendly territory from the Mediterranean to the Red Sea. Nuclear explosives could be used to excavate such a canal rapidly and cheaply.

Though that specific idea was eventually dropped, the Atomic Energy Commission established a program in July 1957 to look into using nuclear explosives for civil engineering purposes. This program became known as "Plowshare," and was centered at the Lawrence Radiation Laboratory for the next seventeen years.

NUCLEAR EXPLOSIONS V. CONVENTIONAL EXPLOSIONS

The concept of using atomic bombs the same way construction crews use dynamite may seem startling to modern minds, but the difference is not so great. Even 30 years ago, chemical explosion's could be made larger than small nuclear detonations, creating enough of an overlap of data to compare the two.

How is a kiloton of nuclear explosive different from a thousand tons of chemical explosive? First, the nuclear explosive releases its energy a thousand times more rapidly (in about one microsecond, as compared to one millisecond for chemical explosives). This produces a sharper shock wave, which is more effective in shattering rock (i.e., for underground mining purposes).

Second, a nuclear explosive releases so much energy that it can break rock and move the debris at the same time.

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

Chemical explosives, on the other hand, normally just break rock and leave the rubble in place, requiring workers to excavate the area with large equipment over access roads. This can be a huge disadvantage in difficult terrain.

Finally, a nuclear device is much more compact, with lower transportation and emplacement costs, than an equivalent amount of chemical explosives. A nuclear device with a yield of a few kilotons weighs only a ton or two and would fit in a 30-inch diameter bore hole; the same yield with chemical explosives would weigh (by definition) thousands of tons and would occupy several thousand cubic meters of space.

In a 1968 book, *The Constructive Uses of Nuclear Explosives*, Edward Teller, Wilson K. Talley, Gary H. Higgins, and Gerald W. Johnson, state "there is no less expensive source of large quantities of energy and no less expensive way to move large quantities of earth than with nuclear explosives." The numbers Teller and his coauthors present are quite convincing. A ton of TNT cost $460 in 1968, while one TNT-equivalent ton of explosive force from a two-megaton nuclear device cost only about 30¢. Put another way, for every dollar spent you could get either four ounces of TNT or *three tons* of TNT-equivalent from a nuclear detonation.

At the time, Teller and his coauthors estimated that a nuclear explosive with a ten kiloton yield would cost $350,000; a two-megaton bomb would cost $600,000. These charges include the nuclear materials, fabrication and assembly of the device, and arming and firing services. This does not, however, include the safety programs, site preparation, or drilling the emplacement hole, nor does it address the enormous security and safeguards issues necessary to guard nuclear devices that would be carried around to all these construction sites. Such costs would be paralyzing to a project now, but at the time they seemed less important.

PLOWSHARE PROJECTS

The first main focus of Plowshare was in excavating and moving earth. Researchers brainstormed ideas even as tests were set up to study the characteristics of underground nuclear detonations and cratering dynamics.

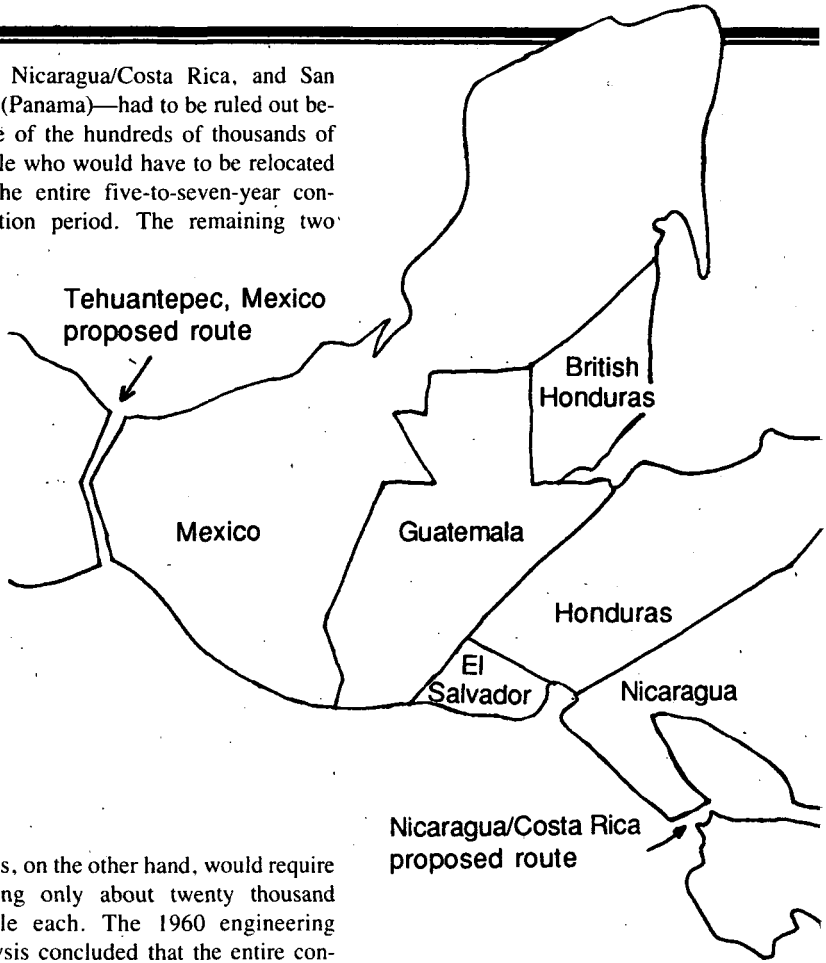
Transisthmian Canal. In 1957, the first year of Plowshare's existence, President Eisenhower ordered a study of improvements for the existing Panama Canal and also asked for proposals for a new sea-level canal. This new "Transisthmian Canal" became the main thrust of research for Plowshare work during the next several years.

A study in 1947 had already identified dozens of alternate canal routes across the Isthmus; at the time, these were determined on the basis of minimal earth-moving, since the engineers would have only conventional excavation tools. With the introduction of nuclear explosives, though, this no longer proved to be such an important consideration. By 1960, the list of possible routes had been narrowed to five candidates for nuclear-assisted construction of the new canal. The figure [see map] shows these routes cutting through Mexico, Nicaragua and Costa Rica, Panama, and Colombia.

Three routes—Tehuantepec (Mex-

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

ico), Nicaragua/Costa Rica, and San Blas (Panama)—had to be ruled out because of the hundreds of thousands of people who would have to be relocated for the entire five-to-seven-year construction period. The remaining two routes, on the other hand, would require moving only about twenty thousand people each. The 1960 engineering analysis concluded that the entire construction cost of a canal through either of the remaining routes would be from $655 million to $1.2 billion. (It is instructive to note, that a concurrent engineering study of widening and deepening the existing Panama Canal estimated that cost to be at least $2.3 billion.)



Harbor Construction. Nuclear weapons testing in the Pacific islands had left many craters (up to 6,000 ft in diameter) in coral atolls. This led to the concept of blasting new, circular harbors along appropriate seacoasts. After all, natural harbors need constant dredging from river sediment or longshore ocean currents, and some harbor entrances are not practical during bad-weather seasons. "However," the Plowshare advocates wrote in 1968, "the most serious drawback to conventional harbors is that

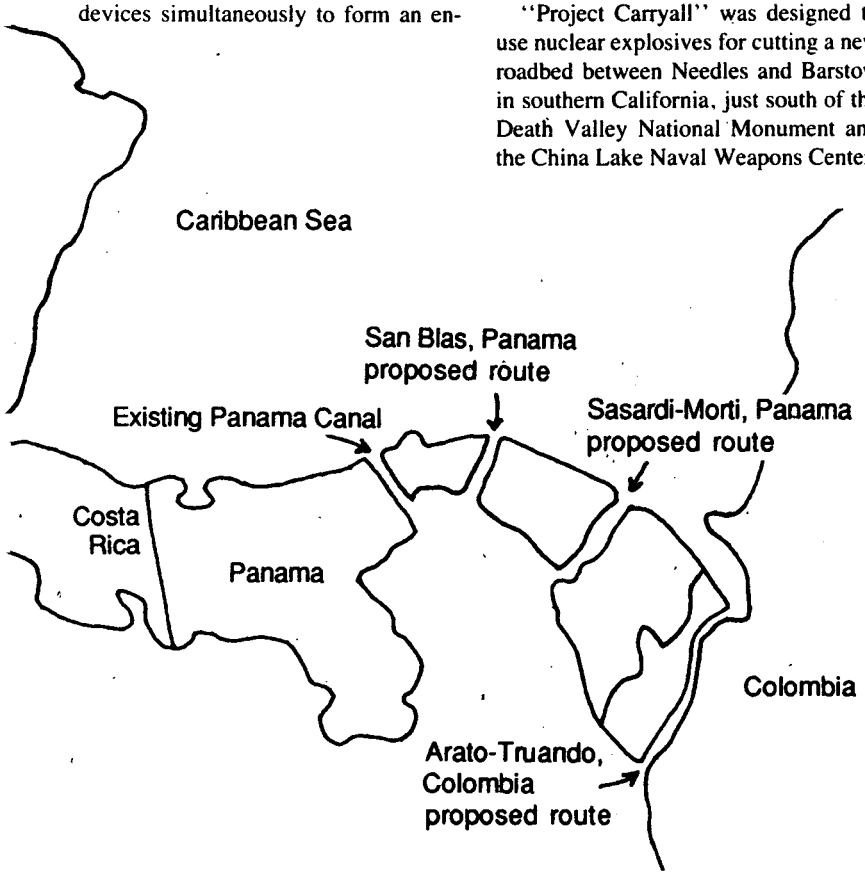
LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

there are not enough of them, and those that exist are not in the right places."

So the Plowshare engineers tried to develop ways to make more convenient harbors and to put them in the right places. "Project Chariot," along a remote section of the Alaska shoreline, was to have been a full-scale test-construction of a new harbor using nuclear explosives. Designed between 1957 and 1961, Project Chariot proposed detonating one 200-kt device and four 20-kt devices simultaneously to form an entrance channel and a small usable harbor. The project was eventually dropped, though, because such a new harbor would have produced little economic benefit to the region.

Highway Construction. Blasting with nuclear explosives allows deep excavations not practical by conventional means. This leads to highway routes that need not avoid terrain obstacles that would otherwise make road construction impossible.

"Project Carryall" was designed to use nuclear explosives for cutting a new roadbed between Needles and Barstow in southern California, just south of the Death Valley National Monument and the China Lake Naval Weapons Center.



LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

NEW

Slip Cases Specially Designed to Fit
ANALOG SCIENCE FICTION/SCIENCE FACT MAGAZINE

Our new soil and scratch resistant slip cases come in sets of five. Each slip case has two deep vertical pockets, a sewn-in bookmark, and the Analog logo on the cover.

YES! Send me __slip case(s) at $2.25 each **OR** __set(s) of five slip cases at $7.95 per set. Enclosed is my check or money order.

Name _____

Address _____

City _____ **St** _____ **Zip** _____

Mail To: **Analog Slip Cases**
P.O. Box 40
Vernon, NJ 07462

Please allow 6-8 weeks for delivery. Available in US only.

M3CG-2

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

The Santa Fe Railway had proposed relocating its rail line to reduce transit times along the route by 50 minutes; the California State Division of Highways was also making a study to reroute the main highway in the same geographical area. But the new path had to cut through the Bristol Mountains, where tunnelling or grading was judged to be impossible by conventional methods.

The Atomic Energy Commission, the California State Division of Highways, and the Santa Fe Railway all formed a study group to look into the possibility of nuclear excavation for this project. The study group proposed using 22 nuclear devices with yields from 20 to 200 kt to blast 68 million cubic yards of rock, making a 10,940-ft channel through the mountains.

Though the Atomic Energy Commission wrote that "a feasibility study of the project indicates that it is technically feasible," uncertainties in the Plowshare program and the scheduled end of the Federal Interstate Highway Program forced the California State Division of Highways to choose a modified conventional route on what is now a section of Interstate 40.

Water Reservoirs. Craters left by nuclear detonations could form new lakes for water retention in places where the geography did not allow for natural reservoirs. Plowshare experiments were proposed to blast new reservoirs, though studies showed that the water thus retained would become contaminated with residual tritium. Theoretical fixes for this problem included pumping out all tritium-contaminated water and using it to irrigate crops (which would have contaminated the plants as well: tritium has a half-life of more than twelve years). Contaminated solid material thrown out from the blast itself could be removed by spraying fresh water onto the area around the crater, or by isolating it from the rest of the reservoir. None of this, however, seemed to be a feasible solution.

When using huge nuclear plowshares at everyday construction sites, the question becomes how to *control* such an enormous amount of energy, and how precisely to predict what's going to happen.

From October 1958 to September 1961, the United States kept a voluntary moratorium on all nuclear testing, but on December 10, 1961 the first nuclear detonation in support of Project Plowshare took place 1,184 feet beneath the desert near Carlsbad, New Mexico. This shot, called *Gnome*, had a yield of only 3.1 kt, with the objectives to recover new isotopes, to conduct a neutron physics experiment, to examine heat recovery from an underground blast, and to make seismic measurements.

The next major test, named *Sedan*, took place in July 1962 at the Nevada Test Site. The Test Site is a huge reservation adjoining Nellis Air Force Range, near Las Vegas. The Site is dry and desolate, with some parts as flat as glass, other parts with jagged mountains that look like iguana backs. Nothing appears even remotely *soft* there. When I visited the Site in summer, the pounding heat felt as intense as sticking your face too close to a fire—the airport thermometer read 99° at 8:15 A.M.

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

An area called "the Flats" is where most below-ground testing is done. Random lines of roads have been scraped into the dirt, originally made to take equipment, trailers, and personnel out to individual nuclear test shots. Subsidence craters cover the landscape from where old detonations vaporized huge cavities deep below the ground and overlying layers of rock and dirt have slumped down.

The Sedan test left the most spectacular of all these craters [see photo]. Though the Sedan device was buried 653 feet underground, it left a gaping crater 1,280 feet in diameter and 320 feet deep. Estimates of its true yield range from 100 to 300 kt. Sedan shows the true potentialities of using carefully placed nuclear devices to excavate huge craters.

However, the canal investigation board determined in the early 1960s that no new Transisthmian Canal was needed after all. Since the driving force behind Plowshare excavation research had been to complete such a canal, the project suddenly found itself without a focus. The Plowshare engineers had to set their sights elsewhere, looking for further peacetime uses of nuclear explosives.

Natural Gas and Oil Well Stimulation. The next major focus of the Plowshare program turned toward stimulating natural gas and oil production. Because the US had become more concerned with its energy resources in the years since the formation of the Plowshare

The Sedan Crater at the Nevada Test Site.

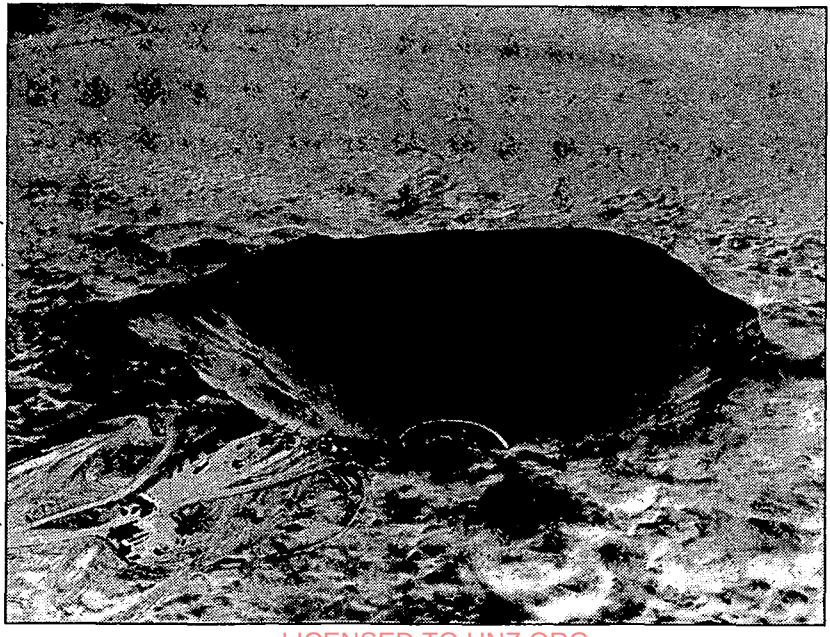


Photo courtesy of Lawrence Livermore National Laboratory.

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

Your Window to the Future

Apply for the new Far Travelers MasterCard!

"Every time you use The Far Travelers Card a percentage of the amount charged goes to support the activities of the National Space Society at no extra cost to you."
Joel Davis — President, *Analog Science Fiction/ Science Fact.*®

Encourage humanity's commitment to the exploration of space.

Use *the* MasterCard for Science Fiction Readers.

No annual fee*

*(for the first year, and later depending upon usage.)

Annual Percentage Rate for Purchases	Variable Rate Information	Grace Period for Repayment of the Balance for Purchases
Variable Rate 16.65%	Your Annual Percentage rate may vary. The Rate is determined by adding 7.9% to the New York Prime Rate as published in the Wall Street Journal on the first Friday of the preceding month.	Not less than 25 days
Method of Computing the Balance for Purchases	**Annual Fee**	**Minimum Finance Charge**
Two-cycle Average Daily Balance Excluding New Purchases	$20.00*	50¢ If it would otherwise be greater than zero and less than 50¢

Other Charges	*There is no Annual Fee for the first year.
Over-the-Credit-Limit Fee: $15 Cash Advances: 2% (minimum $2, maximum $10) Return Check Fee: $15 Late Payment Fee: 5% of each payment due or $5, whichever is lower	The $20 Annual Fee will be waived in subsequent years for card accounts with total annual purchases in the previous year of at least $6,500.

The information about the costs of the cards described in this application is accurate as of April 1991.
This information may change after that date.
To find out what may have changed, call us at (406) 761-8922 or 1-800-735-5536,
or write to BanCard Corporation of Montana, P.O. Box 5023, Great Falls, Montana 59403-9968.

ELECTRONIC REPRODUCTION PROHIBITED

The Far Travelers™ Card

MasterCard®

APPLICANT INFORMATION 001-004-00002

FIRST NAME | INITIAL | LAST NAME

DATE OF BIRTH / / | SOCIAL SECURITY NUMBER – – | HOME PHONE ( ) -

ADDRESS | CITY | STATE | ZIP CODE | YEARS THERE

PREVIOUS ADDRESS | CITY | STATE | ZIP CODE | YEARS THERE

PRESENT EMPLOYER | WORK PHONE ( ) - | YEARS THERE

PREVIOUS EMPLOYER (If with present employer less than one year) | WORK PHONE ( ) - | YEARS THERE

GROSS ANNUAL INCOME* $ | TOTAL MONTHLY PAYMENTS (INCLUDE HOME, CAR, PERSONAL, CREDIT CARD LOANS, ETC.) $ | PREFERRED CREDIT LIMIT $

NEAREST RELATIVE NOT LIVING WITH ME | RELATIONSHIP | TELEPHONE ( ) -

CO-APPLICANT INFORMATION

FIRST NAME | INITIAL | LAST NAME

DATE OF BIRTH / / | SOCIAL SECURITY NUMBER – – | HOME PHONE ( ) -

ADDRESS | CITY | STATE | ZIP CODE | YEARS THERE

PREVIOUS ADDRESS | CITY | STATE | ZIP CODE | YEARS THERE

PRESENT EMPLOYER | WORK PHONE ( ) - | YEARS THERE

PREVIOUS EMPLOYER (If with present employer less than one year) | WORK PHONE ( ) - | YEARS THERE

GROSS ANNUAL INCOME* $ | TOTAL MONTHLY PAYMENTS (INCLUDE HOME, CAR, PERSONAL, CREDIT CARD LOANS, ETC.) $

*Your alimony, child support and separate income need not be disclosed if you do not wish to have it considered as a basis for repaying this obligation.

I authorize BanCard Corporation of Montana to check my credit and employment. I agree that I will be subject to the terms and conditions of the Cardholder Agreement sent with the card.

X _____ Applicant's Signature Date

X _____ Co-Applicant's Signature Date

For Bank Use Only	Account Number	Date	No. of Cards	Credit Line	Approved by

Please mail this application or a photocopy to:

BanCard Corporation, P.O. Box 5023, Great Falls, Montana 59403-9968.

ELECTRONIC REPRODUCTION PROHIBITED

program, this seemed an ideal new banner project.

In many US natural gas wells, the surrounding rock is so nonporous that pumps can extract only a tiny fraction of the available natural gas. If, however, a small contained blast fractured the surrounding rock, the resulting porous rubble would allow gas to flow more freely. This technique could also be used to extract petroleum from tar sands and oil shale.

The first joint government-industry underground engineering explosion was called *Gasbuggy*, detonated east of Farmington, NM, on December 10, 1967; the yield was 29 kt at a depth of 4,240 ft. The Atomic Energy Commission shared costs of this shot with the El Paso Natural Gas Company. Over the next six years, the Gasbuggy shot produced 295 million cubic feet of natural gas in the area—a fivefold increase over what the wells would have produced without the nuclear stimulation.

A 1973 study by the Western Interstate Nuclear Compact estimated that using Plowshare technology to stimulate natural gas wells could recover 65 trillion cubic feet of gas from 2,000 wells in Wyoming and Colorado over a 23-year construction period—this amounted to about 6% of the US projected annual demand for natural gas. During this time, with the energy crisis prominent in everyone's mind, stimulating gasoline production became a real priority. Unfortunately for Plowshare, the underground detonations fractured the nonporous rock in only a local area, helping only a few nearby wells. To make a real difference to US oil production, literally hundreds of nuclear devices would need to be detonated.

Deep Mining. An underground nuclear explosion breaks rock, enough to destroy underground formations and leave a substantial pile of rubble behind. Such a blast could be used to produce aggregate (i.e., gravel) in remote areas for construction sites. Also, as an alternative to strip mining of copper or other metals, nuclear explosions could be used to create underground rubble in a known vein of precious metal; miners could then pump chemical leaching agents into the rubble and draw the solution back out again, from which they could chemically remove the copper.

Hearing of this possibility, owners of played-out mines offered their sites for test explosions. One such offer, dated December 1969, states *"Well, it just so happens that I am the owner of a 1,500 foot vertical 3-compartment shaft in a granite formation here in California. When this mine was closed down in 1942 by Executive Order of President Roosevelt, there was a million dollars of ore blocked out in it. To date, the situation is unchanged. Of course, the vein continues on down and horizontally as well. It seems to me that this is an ideal setup for a 'Gasbuggy-like' test. I would be willing to consider working and cooperating with you or anyone interested in a test or development."*

Engineering companies also clamored to get in on the action, though the Atomic Energy Act from 1945 did not allow the AEC to provide commercial nuclear explosion services. (Up until 1972, the AEC's General Advisory Committee fought to get this changed.)

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

Nuclear Chemistry. The enormous flux of neutrons from a nuclear explosion will produce new isotopes in a fraction of a second that would otherwise require years of "cooking" in the cores of reactors. The neutron flux from a nuclear detonation is so enormous that fifteen or more neutrons can be added to a target nucleus instantly, creating isotopes that would take a decade to be produced in a reactor.

Recovery of these exotic isotopes from the debris of a nuclear explosion is a rather tough problem, though! The authors of *The Constructive Uses of Nuclear Explosives* state, "The explosion must be contained to prevent loss of the product to the atmosphere, shot debris must be recovered, and the valuable product must be separated from the extraneous materials and debris."

Underground Storage Cavities. Nuclear detonations deep underground create huge, empty cavities. These cavities could be used for storage, particularly as holding vessels for offshore oil and near refineries (though someone even suggested using nuclear-blasted cavities for underground sewage disposal!) In 1967, H.F. Dunlap of the Atlantic Richfield Company wrote a memo that states "Use of contained nuclear shots to create cheap offshore storage facilities might save $5 to $10 per barrel of storage capacity in areas where this technique could be used."

Geothermal Power Production. After a deep underground blast, water could be pumped down into the hot rock, then the steam would be withdrawn to turn turbines. Plowshare calculations estimated that a hot rubble cone after an underground explosion would continue to produce enough steam to run a 50,000-kw power plant for up to ten years.

All in all, the 1960s saw an overwhelming surge of ideas from Plowshare researchers and private citizens. So many independent schemes poured in that the director of the US Government's Division of Peaceful Nuclear Explosives had to establish detailed "Procedures for Handling Outside Contacts" in 1964.

Some of these ideas ranged from suggestions by a retired US Army general to shift the Humboldt current along South America to change weather patterns and turn the coastal deserts into farmland; a researcher at the University of Idaho suggested using small nuclear detonations to break up lava "islands" in irrigable farmland. Other suggestions included using subsidence craters, which are parabolic in shape, as perfect foundations for gigantic radio telescopes, similar to the then-newly-constructed Arecibo telescope in Puerto Rico.

INTERNATIONAL INTEREST

In the mid-1960s, the Soviets were pursuing a Plowshare-style program of their own. The level of the Caspian Sea had been dropping regularly from overirrigation, and the resulting fresh water shortage harmed agriculture and the fishing industry throughout large portions of the U.S.S.R. A Soviet engineering plan was proposed to connect the Pechora and the Kama rivers, which fed water to the Caspian Sea from the north.

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

Less than half of this 112.5-km connecting canal could be cut with conventional excavation methods, and the remaining 61 km required nuclear excavation. This was actually done using several 20 kt devices emplaced in 130-m-deep drill holes to cut the canal.

The Soviets had previously shown a willingness to use gigantic amounts of chemical explosives for excavation. In 1964 another irrigation project—in Bukara, Uzbekistan—was used to connect the Amu Darya and Zeravshan Rivers. This project required seven detonations, using a total of 27,000 tons of chemical high explosive, including (on July 23, 1964) the world's record explosion: 9,352 tons of explosive placed in 1,936 holes. This detonation excavated a nine-mile-long cut in a single step, on terrain where "excavators and bulldozers have proved utterly helpless."

Other international interest in Plowshare work was directed toward the United States. The Thai government in 1964 proposed using US nuclear devices to excavate a 30-mile-long canal through the Isthmus of Kra, which would cut off 500 miles from the shipping lanes between India and Japan, and between India and the United States. In 1967 representatives from Israel sought to use US nuclear devices for water recovery and to build canals. That same year, President Belaunde of Peru made the remark, "on this continent where we have forbidden the use of atomic arms, we ought to put the atom at the service of our people."

It looked as if the entire world had accepted the idea of nuclear explosions for civil-engineering purposes. But it was not to come to pass.

THE RAMIFICATIONS OF PLOWSHARE PROJECTS

In developing constructive uses of nuclear detonations, Plowshare had to recognize numerous difficulties beyond the scientific and technical ones, including environmental, emotional, and political problems.

Some of the major Plowshare projects would be "international" in scope, such as the Transisthmian Canal. Existing agreements or treaties—originally designed to limit the development of nuclear weapons among countries—led to bureaucratic difficulties in applying such detonations for peacetime uses.

Closer to home, the federal government encountered conflicts with individual states where Plowshare projects had been proposed. The federal government controlled all special nuclear material to be used in such detonations, but the individual states demanded some part in the decision-making process of whether nuclear explosions would take place there. In September 1969, eleven states (Alaska, Arizona, California, Colorado, Idaho, Nevada, New Mexico, Oregon, Utah, Washington, and Wyoming) formed the Western Interstate Nuclear Compact "to provide a mechanism for cooperation in areas of mutual interest in the field of nuclear energy."

In 1973, WINC and the National Science Foundation commissioned a study with four objectives: 1) to assess Plowshare applications; 2) to evaluate radioactivity releases as well as other hazards from Plowshare detonations to assure

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

protection of citizens and natural resources; 3) to study the legal issues underlying Plowshare detonations; and 4) to assess methods of encouraging public participation in making decisions about Plowshare projects that would have significant local or global impact.

The WINC/NSF study found that "Public perception of the impact of a Plowshare project on a local community may be different from that of an individual sponsor; therefore, the prospective economic gains as well as the greater social burdens in a particular community must be studied in advance and clearly presented to the local community."

Some of the communities would not have been too pleased with the proposed schedules of large-scale Plowshare projects. "The current concept is to conduct the nuclear detonations over a two- or three-year period, at a maximum rate of about one a month," wrote Edward Teller and his coauthors in 1968. "Nearby areas would have to be evacuated for the duration of the entire construction project, as it would not be feasible to evacuate for each detonation."

But would entire populations of communities be willing to evacuate their homes for several years, no matter how great the benefits of a new road, or reservoir, or mine? Even at a "safe" distance, people could experience serious blast effects: large Plowshare explosions could crack plaster and break glass up to 80 miles away. The WINC/NSF study reported that "even though safeguards are exercised in industrial Plowshare activities, the risk of damage to health and property remains."

The authors of *The Constructive Uses of Nuclear Explosives* insisted that "Radioactivity is the least of the problems. It would be limited initially by deep burial to enhance entrapment and by the use of thermonuclear devices specifically designed to minimize radioactivity." However, the 1973 WINC/NSF study recommended twice the minimum detonation depth used at the Nevada Test Site to avoid atmospheric radioactive contamination. "The most serious pathway of radioactivity to the populace appears to be via groundwater," claims the study, suggesting that the borehole must always be sufficiently deeper than the lowest aquifer.

Even some of the more enthusiastic supporters were having economic doubts about the projects as well. In 1967, a representative of the Atlantic Richfield Company wrote to the AEC that ". . . we are seriously interested in the Plowshare program and support it. . . . [However] you can help industry define profitable applications for contained nuclear explosions by: (1) giving us better estimates of what the explosives will cost when in 'mass production' for commercial use, and (2) carrying out research on methods of reducing the size of emplacement holes, hopefully to the 12" to 14" diameter level." This latter point was of great concern because of the high cost of drilling large-diameter bore holes thousands of feet down into the ground.

Another of the major Plowshare thrusts, gas stimulation, just didn't work as well as it was hoped, and would re-

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

quire hundreds of nuclear shots to make any significant increase in US oil production—and any gasoline thus obtained would be contaminated with radioactive tritium. In the same sense, copper and gold leached from rubble cones of nuclear detonations was also contaminated with radioactive fission products such as rubidium.

This caused no public outcry in the 1950s and 1960s, when the atomic craze was sending everyone out prospecting for uranium, or eating candy called "atomic fireballs"; radiation seemed more like magic than poison, though contamination became a real issue as people grew more environmentally aware in the following decade.

I wish I could reference some dramatic event that caused all Plowshare work to suddenly stop in the 1970s, but that was not the case. Project representatives met annually with the AEC's Joint Committee on Atomic Energy, but it became increasingly difficult to defend their budget and position.

As with most research projects, when funding goes away programmatic heads do not usually spend money on a comprehensive document detailing why their project failed. But the files of positive-sounding progress reports and wish-list memos grew thinner and thinner, finally ending in 1974.

Some of the Plowshare research finished and went no further, some parts simply fizzled, while other major portions were absorbed into larger energy programs. At present, the Plowshare Project resides in two cardboard boxes of correspondence in the archives of the Lawrence Livermore National Laboratory. Many of the proposed ideas now seem naive or even reckless, but they also show an exuberance toward science that is refreshing in often skeptical times.

Since the creation of Project Plowshare in 1957, public perception had changed from a sense of wonder and awe at what nuclear devices could do, to an anxiety over putting them to widespread use. Atomic bombs are dangerous weapons of destruction. Their first use was in war, with two relatively small warheads dropped on Hiroshima and Nagasaki and leaving a vivid scar on the collective conscience of the nation. People found it difficult to shift their thinking to constructive purposes. How could we use nuclear explosions, orders of magnitude more powerful than the bombs dropped on Japan, to make roads or sewage-disposal reservoirs?

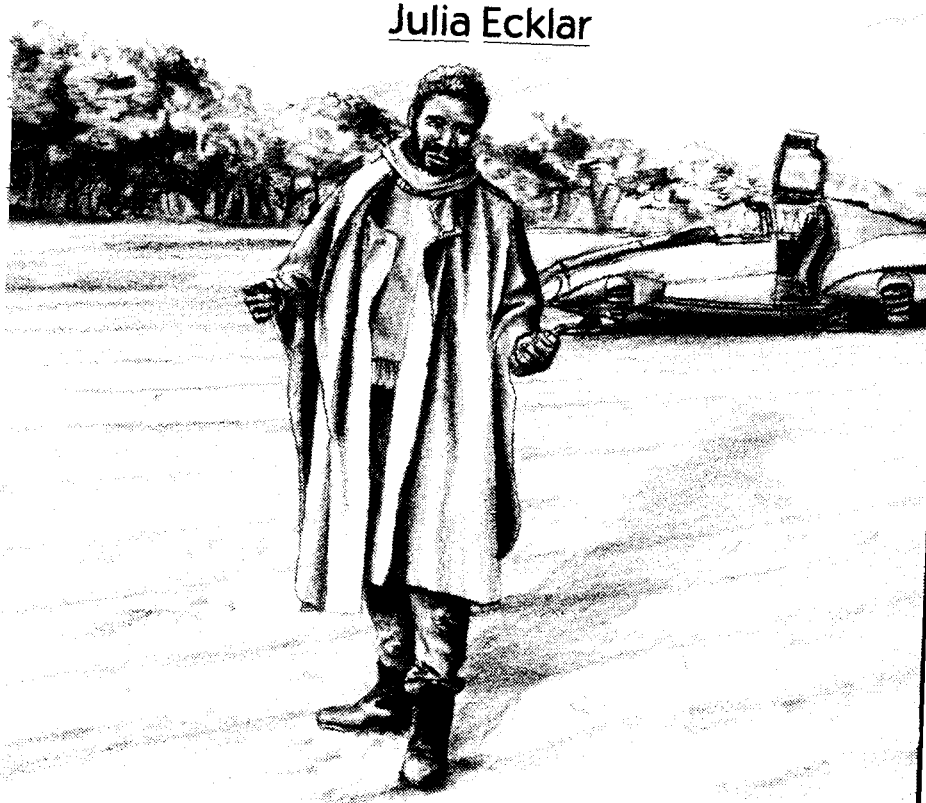
Perhaps people did not want to see nuclear weapons used for such mundane purposes, in fear that we might begin to think of them as mundane tools—and therefore readily usable. ■

MOVING? If you want your subscription to *Analog* to keep up with you, send both your old address and your new one (and the ZIP codes for both, please!) to our subscription department: Box 7061, Red Oak, Iowa 51566.

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

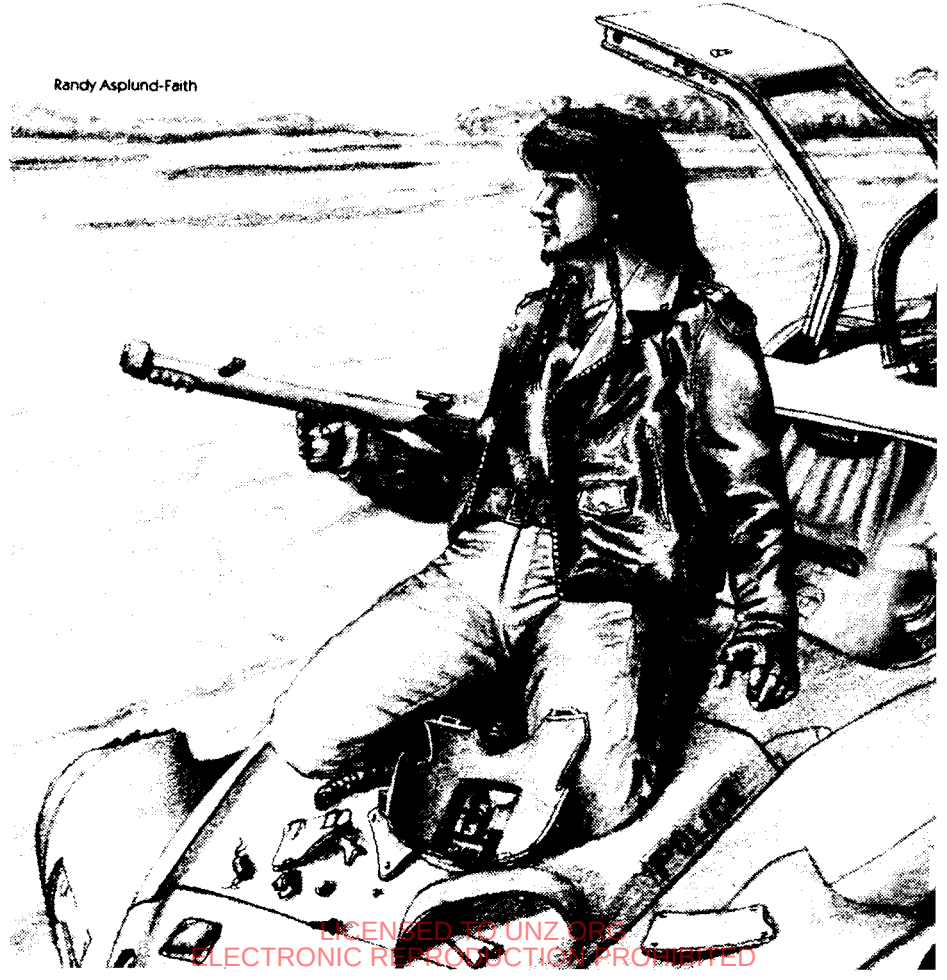
A SWEET DISORDER

Julia Ecklar



LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

Artists have always been pesky varmints, which has often tempted societies to try to control them. Future methods may be even more tempting than those used already . . .



Randy Asplund-Faith

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

"I'll take the mind wipe."

Startled by his blunt statement, I blinked down at this small, wiry intruder and suddenly felt guilty for being so big, and black, and intimidating. Fifty meters away, Nimrod's jumpship shrieked about the hull breach Beehner had effected on its main lock; behind the offending sport himself, Beehner gripped both his arms in one hand, daring him to attempt an escape.

"Don't you even want to know your other options?" I asked Nimrod. I'd never heard anyone volunteer for oblivion before.

"It's not like I only just became a sport, prelate." Disgust and anger chased each other across the artist's face, half-hidden in the fringes of his disorderly black hair. "I've been one all of my life. When you're a sport and you piss on everything you see, your options never change much, place to place. They always boil down to leave, die, or forget why you want to be such an anti-social fuck. Little Miss Chivalry here—" he tossed his head back toward Beehner, and his twin rat-tail braids clapped against the front of her riot armor, "—seems to think it's her duty to make sure I don't commit suicide, and a cop-sized hole in the side of my ship says I'm not going anywhere. What other option did you expect to give me?"

"This is gonna be great!" Beehner's electric blue eyes flashed with delight inside her stark white armor. "I've always wanted to mind wipe somebody."

Beehner is the Colony's only cop, and more than just a little insensitive at times. I scowled her into silence and kept my attention on Nimrod. "We get transports in to pick up cargo. You could wait and leave on one of them." Because I just couldn't believe he was serious. I couldn't believe *any*body who said they wanted half their memories erased could possibly be serious.

Nimrod seemed to consider my suggestion. "How long 'til the next one gets here?"

"Eight months."

He laughed shortly and without humor. "Eight months with no chance to finish a sculpture I've already started? Oh, mind wipe me, please."

Beehner twisted from side to side to frown at the craters Nimrod's wasp mortars had blown into the unplanted field all around us. "You call this sculpture?" she asked. "You landed one hundred klicks from the space port and blew a bunch of holes in Kolna Derny's field!"

"You only think it looks bad now." Nimrod craned his head back to grin at her. "You'd love it from orbit."

"You were gonna blow yourself up! What kind of art is that?"

Staring impassively at the dying sun, the sport offered no explanation.

I shoved my hands deeper in my jacket pockets and sighed. "If all your sculptures are like this, I can see why Earth Central had your ship flagged as a renegade."

Nimrod flicked an indifferent glance in my direction. For an instant, I didn't think he'd answer me, then: "Assholes, all of them." The bitterness in his voice was sharp enough to cut. "Stupid Earth bastards kicked me out because they couldn't appreciate art."

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

Neither could I, of course. I'd have been an artistic sport like Nimrod otherwise, traipsing around the galaxy on industry-owned talent scouts, making an unwarranted amount of money discovering *artistes* for public sale. According to our Colony control system, Mother, Nimrod was a rarity even among sports—an artist who'd somehow managed to save enough money to buy out his option and set himself free. I knew without asking how much Beehner appreciated such an accomplishment; she'd just dragged Nimrod away from his latest artistic endeavor, and would probably spend the next couple days scouring the area for unexploded bombs (much to her own delight). Expulsion from Earth meant Nimrod was a criminal at worst, a social miscreant at best. Either one was anathema to our Colony's environment if it meant putting up with explosives and big holes.

"We're a lot smaller than Earth," I tried to explain. "Things here move a little differently. We're not very patient with people who mess up the way we like things run."

The sport knocked his head back and laughed. "Then you're not so different from Earth, after all."

His laugh cut through me, nicking my pride. "So you still want to go ahead with the mind wipe? You don't even want to give us a chance?"

"Fucking what chance?" he wanted to know. "You either tell me what to do, or I tell you. And I'm telling you, prelate—I want the mind wipe. Christ, do I have to spell it out?"

He must have met with ansenol before, I realized—everyone knew the companies used the mind drug on sports to help them retain their objectivity about their jobs. Maybe, after a fashion, the sports who were used to mind wipes even got to where they liked it a little.

That thought didn't reassure me as much as I thought it would.

Beehner poked Nimrod between the shoulders hard enough to stumble him. "We're gonna have a great time! I learned how to do wipes just like they did you on the scouts. You'll never know the difference."

"No, probably not." Nimrod laced his arms across his narrow chest, sighing with surprising wistfulness at where the last of the sunset leaked out of the sky.

"You'll still be able to do art," I reminded him, feeling obscurely guilty again.

One eyebrow arched to disappear under his hair. "I know I will. I always can." Then he spun about, short and sudden, and slapped the chest of Beehner's armor with the flat of his hand. "Just see if you can't make me a painter this time. I always wanted to do sunsets."

She snatched his wrist to wrench his arm behind his back. "I'll see what I can do."

"Make him a painter! Can you believe it?"

Beehner's voice called me back into the house, off the wide patio that overlooked my sea of trees. I'd had them put my home here precisely because of those trees; I liked walking out in the morning to something that didn't talk back. "Are you through?" I asked her, motioning the transparent doors to slide shut behind me.

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

Beehner, once more in her white and silver uniform, flopped dramatically onto the sofa and threw her leg over the back. "Pretty much. He's had ansenol eighty dozen times—he knew the routine pretty well."

I edged toward the bedroom where she'd left Nimrod. "I'm glad somebody around here does. You may have had a class in mind wipes at the Cop Shop, Beehner, but that was a while ago. It's not like you're an old pro."

"Pro enough." I heard her shift to follow my movement. "Don't worry, prelate. You can't say anything to screw him up now. He'll be awake in a second, anyway."

Disturbing Nimrod's freshly scrubbed slate didn't concern me so much as what I'd find after Beehner's ansenol wipe. We'd established this Colony as much as a haven for people craving calm and quiet as we did to supply food for the outer stations; Nimrod, as we'd found him, clearly had no place in that scheme, anymore than he'd had a productive place on Earth. Agreeing to stay meant agreeing to the Colony Charter, and the Charter stated explicitly what measures could be taken to ensure our continued tranquility.

But the Charter also stated that I had to be present whenever a mind wipe was performed. I'd walked out tonight halfway through Nimrod's first injection, buffeted by gusts of pity and guilt; I felt even worse about creeping back to look now. Ten hours after confronting the cocky, embittered sport, I just couldn't imagine what he'd turn into once he no longer remembered who he'd been.

I glanced back at Beehner. "How much did you take?"

"Only about a Terran year," she admitted with casual disregard. "From the time he left the talent scout to now. He'll never miss it, trust me—all he did was annoy the hell out of a whole planet."

I wondered if we could keep him from repeating the same mistake without the benefit of his own memories.

Nimrod apparently remembered enough, though. He met me at the entrance to the bedroom, pale and calm. "Did you buy out my option?"

"No . . . I . . . " A queer trickle of anxiety chilled my stomach. He didn't even stand the same way. A certain innocent hesitation laced his voice, and eyes as attentive as a child's angled up at mine from beneath his shaggy bangs. Nothing of the tortured sculptor remained.

"I . . . no . . . " I stammered again. I took a step back from him, tried to pretend I'd never met him before. "You bought yourself out, Nimrod. You're free."

He nodded slowly, genuine delight tracing a faint smile on his lips. "Solid."

"You're on Calliope III. We've got a farming Colony here, and I'm Keanu Regis, Colony prelate. This is our cop, Kym Beehner." I motioned somewhat awkwardly toward the main room, where Beehner still waited. Nimrod looked obediently over my shoulder when I gestured. I used his shift in attention to return to my window, putting Beehner between us.

Beehner rose up on her knees and leaned over the back of the couch, smiling. I assumed the smile wasn't meant as a greeting, but Nimrod didn't need to know that yet. He stepped farther into the room, eyes flicking from object to

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

object, hands ever so slightly outstretched, as if he feared to lose his balance. Little by little, the joy in his expression grew. "I'm really not on a starship," he said at last.

His happiness at realizing that eased me somewhat. "No, you're not."

Beehner giggled with delight. "Was I beautiful," she asked me, rolling to sprawl on my couch again, "or what?"

The "or what" sprang to mind. Instead, I stepped aside and beckoned Nimrod over, leaving Beehner to her ecstasies. "Nimrod, come look outside." The doors whispered open at my command.

He followed me slowly into the pale, biting morning, boot heels clicking on the patio surface with quiet urgency. So fascinated did he seem with the pastel sky and the trees, I thought sure he'd walk right through the restraining rail. When his waist bumped it, though, he grasped it with both hands and stretched far out over the trees. Green-scented wind tied knots in his already tousled mane.

"Is that a holo?" he breathed, astonished.

"It's real."

His eyes were suddenly deep with tears; he drew a profound sigh. "I'd seen photos," he whispered, "but I didn't know. . . . I didn't realize there was so much *color* . . . !" One hand flashed away from the railing, and I jerked forward to grab at him if he fell. Oblivious to me, he pointed at something below and ahead of us. "Look how that tree limb echoes the shape of the hill! It brings all your attention back through the brightness of the sky, then around to the front of the tree again. And the roots there are reaching for something, just like the branches." His face fought itself into an almost-scowl, and his hand sank back to his side. "Is it like this all the time?"

I studied the morning view, trying to see his beautiful symmetry somewhere in the dark, nebulous mass. All I saw was trees and quiet. "Every day," I answered him, unconvinced.

Braids whispered against the fabric of his shirt when he shook his head. "I never guessed there was so much color in the sky."

"It's morning. There's more in the morning." Then, remembering Beehner's promise to him, I said, "You should know that, though. You used to be a painter."

Nimrod only laughed and cast me the first of many wry, sideways smiles. "I'm a sculptor, prelate. Stuff like this just makes me *wish* I was a painter."

Behind me, Beehner started to cackle. Well, it had been worth a try.

It took less than six months for me to wish Nimrod was a painter, too.

"Regis!"

Nimrod launched himself out of my office door, dervishing across to where I supervised the loading of what remained of Nimrod's cannibalized jumpship. Ven Dunas peeked a question at me from under the lifting drone, and I just shrugged. I hadn't wanted Nimrod to see us disposing of pieces from his ship—that's why I'd scheduled this for a statue planning morning—but it was too late now. Moving to intercept the sport, I hoped this whole statue business had him vexed enough to ignore whatever Ven was doing.

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

" 'Morning, Nimrod." I stepped neatly in front of him, tried on a smile. "Didn't expect to see you so early."

Nimrod *clomped* a twisted mass of plasteel and wire onto the loading drone's chassis, then swung himself up to sit next to it. "They hate it." His voice sounded sulky, but his face remained rigidly mature as he stared at the plasteel lump. I only barely recognized it as a mutilated communications remote.

Ven uttered a little squeak of protest. I just motioned him to shut off the drone and go away for a while. "Your design?" I asked Nimrod, keeping his attention.

The sport nodded, brows knit. "They said it's pointless, and artless, and . . . " One hand cupped the plasteel mess, as if shielding it from the sun. "They said it was ugly."

It was only then I realized he meant this electronic monstrosity to be the statue design. "Well, Nimrod," I began uncertainly. I felt all sharp lines and hard edges when I lifted it. "I don't think this is quite what they were after."

"They don't know what they're after." He peered up at me sideways through his hair. "What do you think?"

"Well, I . . . "

"You think it's ugly, too."

I was never very good at lying. I didn't know how to start. "I guess it is a bit, yes."

He snorted—a sound of pure contempt such as I hadn't heard from him since the day Beehner dragged him out of his ship. Snatching back the sculpture, he explained, "It's an abstract, Regis. It's precisely what they wanted—it's what *everybody* wanted."

I laced my hands in front of me so they wouldn't feel so suddenly empty. "I was there when they commissioned the statue, Nimrod. They said they wanted something that symbolized the Colony. Something beautiful, and free."

He shook the sculpture in his fist. "This is beautiful!"

"It's not."

I didn't really mean it to come out that way, but truth's truth and even Nimrod had to accept that. And truth was, he was hanging onto the pug ugliest piece of art I'd ever known a sport to turn. "It doesn't even look like anything," I offered in an attempt to soften the blow.

He pulled it down into his lap, his expression at once vulnerable and hard. "It's an abstract. You have to really *look* at it—really *see* it. The whole point of abstract is that you can see yourself in it if you look deep enough." Lying back flat on the drone, he lifted the sculpture in both hands and presented it to the air. "I take the emotion and present it to you in this. *You* the viewer have to give it form."

"All well and good." I didn't believe a word of it. "But can't you present it just a little more attractively?"

He let his arms and the sculpture fall back into his lap.

At least somewhat touched by the disappointment in his eyes, I temporized, "People don't want to see themselves, they want to see beauty."

"But why can't they find the beauty themselves?" He rolled over and transfixed me with pleading hazel eyes. "Why do they have to depend on *my* visions of beauty?"

Questions like this must have been why they first started shipping sports off

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

into space. "Nimrod," I sighed wearily, "just go make something beautiful. Don't try to make these farmers understand." *Or me.*

I thought it was anger that pushed Nimrod to his feet and made him kick the drone instead of me. I know different now, but it matters that I thought I understood what moved him at the time. He threw the plasteel travesty onto the ground at my feet. "Be careful what you wish for, prelate," he spat before stalking away.

Because you just might get it.

And we did—a stately stone construction of a woman, one hand tight around the controls to a crop mover, the other shielding her carved agate eyes from the sun. Where she looked you couldn't say, but it was somewhere serious and far, for an expression attentive to near fanaticism etched her handsome features. The angle of her arm, the way the shadows moved across her face in response to the traveling sun, the falls and folds and depths in her clothing, body, and hands were perfect beyond anything imagination could hope to provide. The farmers loved her, and excused Nimrod from another half-year of field work so he could sculpt other things just the same.

I hated her, and my first understanding of Nimrod came on the night I figured out why. I'd left my office after a late conference with Mother—and there *she* stood, waiting in the dark for some conclusion that would never arrive. Even her dedication to that nonexistent purpose was superior to anything around me, as if her perfection spread ugliness by the simple act of comparison.

Maybe that's what Nimrod meant when he said we should all go looking for beauty by ourselves. I'm still not sure. I just know I realized then and there: the danger in relying on someone else's vision of beauty is that his vision just might be closer to the truth than your own.

"You coming with me, or do I get to kick his artistic little ass on my own?"

That was as close to a warning as Beehner ever gave me.

Her voice yanked my attention away from yet another sullen study of Nimrod's glorious statue (any more, I fantasized a lot about convincing the farmers to dismantle it). Beehner's footsteps trooping off down the avenue convinced me to trot after her. I was fairly certain she could—and would—kick Nimrod a whole lot further than I cared to try and recover.

I heard the shouting two full streets before I caught up to them. Parner and Dosh Tovin shut up the minute they saw me. Nimrod took advantage of their sudden silence to rail, "At least you've got the sense to act chicken-shit in front of authority!" Beehner—one fist twisted in a handful of Nimrod's hair, the other holding the Cop Shop light-rifle well away from her captive—jerked the sport into a better example of proper posture.

I slowed my gait and slipped in between the combatants. "Beehner, let him go." Much to my surprise, she did, though not without an eloquent snort of disdain. "Now, what's going on here?"

"We paid him for art." Parner crossed

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

his arms, then seemed to realize how sulky that looked and stuffed his hands into his pockets instead. "Me and Dosh wanted something—you know, *pretty* on the side of the building, to make it look nice."

Parner's twin leapt forward to gesture wildly at the structure in question. "Instead, he goes and ruins the whole wall!"

Sure enough, a patchwork montage of color, texture, and paraphernalia replaced the once-white expanse. Bits of farm equipment, hair clippings, and broken rock studded tracts Nimrod must have reassigned with a molecule arranger in order to create those colors and affects; a dead animal, its head melded into the wall itself, hung in the midst of the mess. Near the very center, a ragged hole gaped into nowhere.

My first instinct was to ask Nimrod why every time I left him alone for ten minutes he pulled crap like this. Too much passion infused the cluttered wall, though, even if I couldn't recognize a name for that passion. So instead of criticizing him, I asked tiredly, "Nimrod, did they tell you ahead of time what they wanted?"

He kicked his chin back in that haughty, angry way he had anymore. "They told me. They said they wanted art."

That sounded pretty straightforward to me. I looked at Parner and Dosh. "Is that *all* you told him?"

"Well, yeah," Dosh grumbled. "Didn't know we had to be specific just to get something nice."

"This *is* art!" Nimrod protested.

"It's defacing private property," Beehner retorted.

"It's a private statement made public," he informed the cop, no hint of malice in his voice despite his sharp words. "Art teaches us about ourselves. Look . . . " Nimrod leaned toward the wall, touching the components and the colors. "This is us." Long fingers played across the ragged central hole. "I'll make it bigger as the days go by, as long as we keep getting emptier and emptier . . . until it finally eats up everything."

I moved up behind him to take his shoulders. "Come on, Nimrod. Maybe you and me had better take a walk."

"What about our wall?" Parner wanted to know.

I tried to hide a sudden explosion of dread. "Are you planning to press charges?" I asked the twins as casually as I could.

"Hell, yes!" Dosh yelped. "It'll be *months* 'til the next supply run! How're we supposed to fix this before then?"

"Defacement of private property," Beehner said, nodding severely. I wanted to hit her.

"We not only paid good money," Parner went on, "but we spent a lot of time planning this with him. It's not like anything he does now will give us back those wasted hours."

"And I know we're not the first he's done this to."

Beehner plucked at the hem of her white uniform, settled the light rifle across her shoulder with a *clack*. "Public nuisance, productivity interference, and general bumhood." She angled one finger against the side of her neck, hissing in mimic of the Cop Shop hypo. "Read the man his rights, prelate—he won't remember them for long."

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

* * *

"Why, Nimrod? Why can't you just leave people alone?" Hell, he'd lasted longer on Earth.

Inside the Cop Shop holding apartment, Nimrod twiddled with the couch cushions until they stayed twisted into whatever position he'd been aiming for. He did this every time I held him in overnight custody—rearranged the furniture, tried to repaint the walls. He spent a lot of time in confinement anymore.

I leaned my head against the lintel and sighed. "Nimrod . . . "

"I'm not trying to be a nuisance."

"Funny—you're doing a great job." That sounded too much like Beehner, which disgusted me. This was a stupid conversation to begin with; if he opted for the ansenol wipe again, he wouldn't remember a damn thing I said. Which made me wonder if I wouldn't be playing exactly the same scene with him another nine months from now.

"The Tovins are the twelfth formal complaint against you in the last two months," I tried to explain, scrubbing my fingers through my hair. "If I go by the old equation that says ten folks want to complain for every one that does, you've managed to irritate everybody in this Colony more than three times over."

He plucked up one of the half-finished sculptures he'd left here after his last interment. "I don't care."

"You will if Beehner and the rest start screaming for me to do something with you." As I was certain they would do; the Tovins were merchants, not known for sympathy and patience much surpassing Beehner's. "If I have to sentence you, you'll only have—"

"—three options," he finished for me, not turning away from the sculpture in his hands. "I can throw myself at the mercy of the public court (and most likely get euthanized for my efforts), I can choose to voluntarily leave the Colony on the next transport ship, or I can undergo ansenol treatment and forget all these glass-headed farmers ever drove me bug-fuck."

Chilly, whispered warnings made my hands twitch against the back of the sofa. "Beehner told you that."

Nimrod flicked me an insouciant smile, and shrugged. "Maybe. But I doubt it."

"Then how did you know that?"

"I just know." He tossed the lopsided sculpture from hand to hand, pacing beyond me to stare out the narrow window. "Just like I know UN regs state we can't liberate works of art from sentient alien cultures—if they're smart, we have to *purchase* the art, not steal it. I *know* that, but I don't remember learning it. Shit, I don't even remember doing it."

He turned with a sigh, a little pirouette of grief, and leaned his shoulders back against the window. "I sometimes *know* the strange, wonderful sculptures I see in holos are mine—I *know* I created them! I recognize the forms! Yet I don't remember actually sculpting any of them. . . . I don't even remember what I must have been in order to see them in my mind. . . ."

I started to move across to him, but stopped myself at the end of the sofa, folding my hands into a mute basket of helplessness. "Nobody's going to force

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

you. You don't have to stay if you're not happy."

"No, Regis . . . " He gently placed the sculpture on a table to his left, bracketing it neatly between shadow and light. "Somebody's always forcing you, one way or another. I was an active sport, remember—I've probably been ansenol wiped . . . " he shrugged again " . . . oh, hundreds of times. And while I may have gotten used to it after a while, it didn't start out as my idea." He shied away a little. "Like the hole in my wall. I wonder what got carved out of me just because I wouldn't make art what they wanted it to be."

No anger burned in the hazel eyes he turned up at me, only sorrow and the bright discoloration of fear. "Leaving Calliope won't fix anything. Even if the Tovins decide not to wipe me, I'll never get back what's already gone. And I don't know if I can stand to give up any more."

I tried on a smile in an attempt to ease his fears. "I'll tell the Tovins you're sorry. Considering your background, maybe they'll withdraw the charges and settle for having you fix the wall."

Nimrod flashed a stiff smile in return. "Maybe. Maybe I could talk to them, too." He pushed away from the window and took to prowling the room again, wild hair glinting blue when he passed through a square of sunlight. "Do me a favor, hey? All my tools are down in my flat, and I want to sculpt yet tonight. Fetch them for me?"

"Sure." I backed toward the door, willing to believe we'd solved the crisis, just as happy to avoid making decisions in the face of Nimrod's admission of partial recall. I wanted to talk to Mother about this. "I'll leave the apartment open," I told him in parting. "In case you want to talk to the Tovins before I do."

Again at the window, Nimrod cocked a grin over his shoulder and winked with broad delight. "Thanks, Rege. I won't forget this."

When I got back to the apartment, Nimrod was gone.

I tried not to let my mind run away with suggestions. Instead, I walked straight through the apartment to the Cop Shop, pinning Nimrod's pack of chisels beneath my elbow like it were some bird I expected to escape. I didn't let go of the tools at all, in fact, until after I found the open suit locker and saw that Beehner's riot suit was missing. Then my mind turned up memories of the suit's first jaunt against Nimrod's wasp mortars, and I knew with frightening certainty where the artist had gone. Maybe I even knew why. Either way, when I glimpsed Beehner chatting amiably with the Tovins on my way out of town, I didn't interrupt her socializing.

Clouds hurried ahead of my mover, rushing to cluster on the horizon in anticipation of evening's approach. By the time I reached Derny's back forty, twilight's thready chill stitched itself into the wind, teasing shivers from me when I finally climbed out to walk the last hundred meters. Nimrod, seated on the hood of a mover he'd stolen from the Cop Shop, popped his head up to grin at me. The riot suit pieces in his lap clattered with the movement of his wave.

"Howdy, prelate! Somebody sure

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

tried to make a glorious mess out here, didn't they?" He craned his head as far around to either side as it would go. Ragged indentations surrounded us, faded reminders of the blast craters Derny's drones had labored long to repair. "Bet it looks bitchin' from orbit."

A horrified little tremor set up shop in my stomach. "You remember . . . " When my courage failed to batten down that tremor, I paused a good fifty paces from his mover. "You remember doing this, don't you?"

Nimrod flicked a pleased grin in my direction. "Did I? Solid." Then he settled back against his mover's windshield with a sigh. "No, I don't remember. Not this, not anything. I just knew nobody would get hurt way out here . . . and I knew how to fly here. So here I came." Tucking his chin absurdly close to his chest, he peered down his own length at the dismantled riot suit. "You don't suppose Beehner's gonna actually miss this, do you?"

He must be on something, I realized. Either that, or finally too crazy for even ansenol to bring back. "Why?" I asked casually. "You taking it somewhere?"

A blush such as I never expected from him highlighted his angular cheeks. "Sort of."

"Look, Nimrod—"

He exploded from under the suit parts, coming up to his knees on the mover with the light-rifle balanced easily in both hands. Even my breathing halted, and I stared at him in stupid silence with one foot in the air. "You don't want to do that," I finally said, cautiously regaining my footing.

I wanted to believe I saw the rifle waver, but if I did, the movement was too small to take for granted. Nimrod did settle back onto his heels, though, and glanced across the pock-marked field again. "Even if I make you stay here, it's not like you'll feel anything. The blast will take us both out before our nerves could even fire."

I curled my toes inside my shoes, trying to suppress any other outward sign of tension. "You're not going to shoot me," I insisted calmly, "and you're not going to blow anything up."

Nimrod swiveled his full attention back to me. "Oh?"

"You won't hurt me." And, to prove my belief in him, I took a single step forward.

The rifle snapped level with my face. "Oh?"

This time, I didn't question his conviction.

"This isn't about the Tovins," he explained in a tone of utmost reasonability. "It's not even about the ansenol wipes. Not really. It's about all the things I want to do—the things I want to sculpt that'll blow away like so much dust if you take my memories away." He leaned sideways to study me down the length of the rifle. "At first, I really hated to think no one would ever see the things I had to say—that so much of *me* would disappear forever with the ansenol.

"But then I thought again—a little after that piece of shit they made me put outside your office, some more after the Tovins today." Sinking back onto his rump, he cradled the rifle in the crook of one arm, gathering together pieces of Beehner's suit with the other. "Art isn't for people," he explained, positioning the segmented back plate in his

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

lap with intense care. "It isn't even for me, really. Art just *is*, and that's all it has to be. People don't have to see or even remember art to justify it having been created."

I waited for him to go on. When he didn't, I asked, "What's this got to do with Beehner's suit?"

He grinned, the same crooked grin he'd displayed on that very first day. "Well, this thing is powered by an energy cell right here." His hand clapped sharply against the back plate. "Clever design—you can only reach it from inside. I figure a blast or two from this rifle ought to do the trick." He jerked his chin at the field beyond the mover's nose. "Should take all this out quite nicely."

He was right—neither of us would feel a thing. "All your art would still never get done," I pointed out, hating how thin and frightened my voice sounded. "Killing yourself won't make anyone care."

"Too true," he conceded, "too true. But it'll be a choice I made, not one that somebody else made for me. Who knows how many times I've had these brilliant artistic realizations—just to have it all swept away?" He shook his shaggy head, sadly, slowly. "I can't have everything, Regis, but I want to have something. Something I created by myself, for myself. Something even ansenol can never take away."

I pictured him straining across my balcony railing, eyes painted with the wonder of a real morning sun. "You always wanted to sculpt a sunset."

Nimrod winked with bittersweet glee. "And now's my chance."

"There will be other chances." A lie, and I knew it. "Come back with me. Come back and . . . calm down. Create whatever art you want, and maybe if you leave everybody else alone people won't feel like they have to use ansenol to control your behavior."

He snorted and spat over the edge of the mover. "If I 'calm down,' I'm already letting people control my behavior. I guess I'm just a selfish prick, Rege, but I want to do this. Especially when my only other option is sticking around with a bunch of shit-heads who think divesting folks of their memories is the best way to handle dissension."

"We can change the rules—"

"No, we can't. Not so it makes a difference, at least." Shifting one foot under the back plate, Nimrod lifted it just enough to slip open the power panel and nudge the rifle's muzzle inside. "One person can't change the world when he can't even remember why he wanted to change it, Regis. I changed you. That's enough for one tired, fucked-up sport, I suppose."

At that instant, I wanted to remember the clear, clever lines of his face forever. The truth was written there, somewhere amongst his wild, rat-tailed hair and hazel eyes. I knew I had to find it now or live content with never knowing. "Are you really sure you've changed me?"

His shrug said he didn't know or care; the inquisitive tilt of his head simply said he wasn't certain. "You offered to fix things for me. That's more than I expected." Manic glee exploded into his expression, and he winked at me. "Tell you what—I'll give you forty minutes to get back to the Colony without calling out Beehner to try and stop

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

me. If I'm still alone out here after that, we'll assume I've got my answer. What do you say?''

Nimrod was right—after I left him, I could have called ahead and warned everyone of his wild plan. He wouldn't have blown himself up while surrounded by innocent Colonists, and Beehner and I would have had time to contrive some way to get the light-rifle from him.

But I never placed that call, so Nimrod never was surrounded, and, consequently, only Beehner cared where I'd been when I finally parked my mover under the early evening shadows in front of the Cop Shop.

''My suit's gone!'' she hollered at me as I headed for my office. ''Did you take it?''

I didn't even look at her. ''I'll tell you later.''

I paused only long enough to consider destroying the harvest lady Nimrod had erected so long ago. Still hideously perfect, she stared over my head in the direction of Derny's field, waiting. I couldn't blame her any more than I could blame Nimrod—neither of them had asked to be created, and she didn't even have the option of choosing to be destroyed.

When the brilliant, silent flash shattered across the darkened sky, everybody except me ran to the edge of the Colony to stare. I had the advantage of knowing what had happened, so I left the Colonists and the statue to their speculations and locked myself in here.

Without her riot suit or the light-rifle, Beehner can't do much besides pound on my office door and promise I'll be sorry. I expected that. She's sent someone for a repair drone, apparently planning to circumvent the security on the building so she can get to me without tearing down the walls. That should take her several hours at least, which is just fine with me. I need the intervening time to think.

Assuming they've figured out by then what caused the flash in Derny's field, they'll also have figured out that I didn't stop Nimrod from doing it. That counts, I suppose, as a fairly anti-social act. I'm pretty sure I know what options they'll give me.

Predictably, I don't find the choice as easy as Nimrod did. If I opt to leave Calliope, I'll retain my memory but not my ability to use any of the things I've learned. If I stay here and let them wipe me, I'll retain my power as Colony prelate, but I'll have no inkling of what this power is good for.

I differ from Nimrod there, you see. One person *can* make a difference if he's the person everyone else expects to be controlling them. I think about Ven asking my OK for every damn thing he does, and Beehner backing down nearly every time I tell her to. I think about the Tovins, who have always acted politely ''chicken-shit'' for my benefit. I think about all that, and I know that throwing this opportunity away would be as wrong as Nimrod's commissioned statue, making the rest of my life ugly by comparison. So I'll make retaining my position as prelate part of the grounds for allowing the wipe. Considering the Colony would otherwise have to put up with Beehner

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

until the next election, I don't think my ultimatum will be a problem.

They'll probably only take my memories of Nimrod, after all. He's the only problem; I was civil, safe, and predictable until I met him. With that in mind, I'm having Mother help me save this record of these last nine months. We've hidden it from anyone but the Colony prelate, and Mother will play it for me in my home whenever Beehner leaves after the wipe. Perhaps with these words as my guide, I can rediscover the glimpses of freedom Nimrod showed me, and justify this terrifying gamble into which I'm planning to enter.

Perhaps, like Nimrod, I'll be lucky enough to *know* what this all meant to me, even when I can't remember it any more. ■

IN TIMES TO COME

● The big feature in our October issue is "Guilt by Association," a new entry in Timothy Zahn's "Soulminder" series. Given proof of the physical existence of that ancient concept, the soul, and physical means of storing and manipulating it, not only religious but legal practitioners would have a whole new set of capabilities and problems. "Guilt by Association" offers at least one of each. How does criminal prosecution change if a deceased victim can testify at the trial, with the help of a temporarily borrowed body? And if that body, while borrowed, wanders off and commits a crime of its own, who gets charged; the body's owner or its occupant? That sounds simple enough—but only if you're sure who *was* the occupant at the time....

The cover goes to the conclusion of Lois McMaster Bujold's *Barrayar;* there's also short fiction by Jerry Oltion and Kent Patterson. The fact article is "The Mote in NASA's Eye," wherein Charles Sheffield muses from a highly knowledgeable vantage point on just what went wrong with the Hubble telescope. Everybody knows about the flaw in the optics, but the *real* problem may have been an essential ingredient that was missing long before things got that far....

LICENSED TO AMZ SEO
ELECTRONIC REPRODUCTION PROHIBITED

Jay Kay Klein's biolog

●"The Music Box," in 1989's September issue was a truly astounding first story for the complexity of its underlying theme. Idiomatic ways of looking at things generally accrue from a process of self-education. This was especially difficult for Julia Ecklar, since she spent so many years attending universities.

Fortunately, her family moved from an Ohio farming community when she was four. In the Kentucky college, where her mother taught, she saw occupations other than stooging for horse trainers or de-tasseling corn. She also acquired an unusual viewpoint as a result of her family being just about the only Caucasian Americans in the college housing. At age eight it was back to the farm community, then on to boarding school. She was in the last graduating class at the tiny school of the Brown County Ursulines.

From studies heavy in classical voice, guitar, and piano she went to the University of Dayton as a physics major. She spent a year in a running battle over why shouldn't it be OK for a physics major to take classical voice lessons. Next, at the University of Pittsburgh, she tried more physics before switching majors to biology, herpetology, and computer science. Finally, she fell in love with anthropology, which, after all, is the study of mankind. In a part-time job at the med school pathology lab, she learned all you'd ever need to know about PCs and how to air-freight cadavers to Europe.

She'd been writing since third grade and always knew she wanted to be a writer. Although her eclectic curriculum wouldn't get her a degree in any standard job field, the subject matter and diversity of viewpoints she had acquired provided the originality to interest editors. Last year, she started to write full-time and now has a fantasy novel in the hands of a publisher. A second novel is well under way. Outside interests such as horseback riding and softball are currently on hold, though she continues with The Bach Choir in Pittsburgh, which takes her to international music festivals, local concert halls, and Pirates games. There is another, rather unusual, hobby that she has apparently invented. She rewrites movies she and her friends have just attended and critiqued afterwards.

Julia's prime directive is that a writer ought to know exactly what he, she (or it) is telling the reader. Unconscious biases in stories distort truth and warp what goes into a reader's mind. She herself only realized that until a few years back she had followed the age-old custom of giving male characters the best and most active parts in her own writings. For centuries, female characters mainly fetched refreshments, are fought over, or are brutally assaulted. When this magazine was forging modern science fiction in the thirties and forties, it had only two major women writers. E.M. Hull wrote about the manipulative male Artur Blord, and C.L. Moore about the very macho Northwest Smith.

Julia tries to show that women and men are capable of the entire range of human activities and aspirations. It's this truth that she wants to bring to her fiction. ■

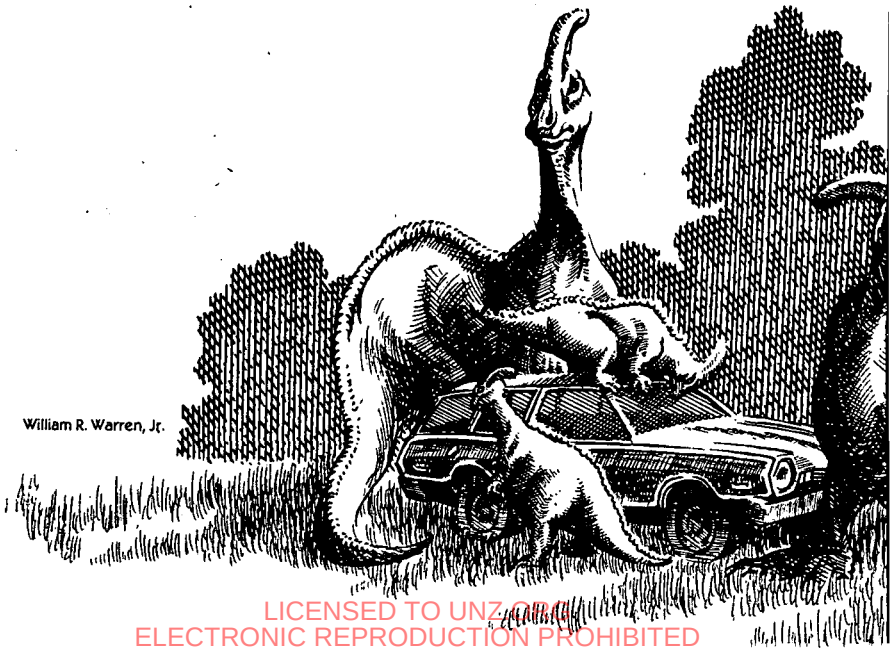
Julia Ecklar

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

NO TIME LIKE THE PRESENT

Paula Robinson

All you need to convince people of an unfashionable truth is proof, right? Well, almost . . .



LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

LICENSED FOR PERSONAL USE ONLY
© CRANDALL REPRODUCTION PROHIBITED

"Hey, Phil, cut it out," I said, trying not to sound panicky. "You're scaring me."

Phil smiled broadly and leaned back until he was only halfway over the railing. "Mark, you have no sense of adventure." The french fry he'd dropped had hit one of the small sharks under the pier, then became an apparent subject of argument among the others. Phil watched with obvious amusement until his french fry was gone, at which point he straightened up and turned his attention back to the women on the beach.

I wiped my brow, and wondered why I couldn't have befriended somebody with a little more sense. Phil had suggested this place for lunch. I had agreed, not realizing that it was situated smack above a school of sharks. Granted, most of the little guys were less than a yard long, but still.

Dorian sauntered over with our plates. Dorian was our waiter, and he looked to be at least thirty. Phil and I had found out he was a fellow student at Oceanside University. He told us he worked here to pay the rent while he studied postgrad math.

Dorian glanced at the sharks before setting down our plates. "Best-fed fish in the Pacific," he muttered.

"Are they always there?" I asked.

"Well . . . I'm not supposed to admit it, but, yes." He shrugged. "Mostly it's just little ones, anyway. The bigger ones stay out past the bay."

"I'd think the big ones would swipe all the goodies from the little guys," Phil said.

The waiter smirked. "They only want big things. You know, sea lions, things that size." He set down bottles of mustard, catsup, and mayo, and shook his head. "We only get the *big* sharks when a customer falls overboard."

Phil was staring through the wooden railing. "Looks like they'll eat anything you throw them," he commented.

"Oh, yeah," I said. "I hear they've found fifteen-footers with tin cans in their stomachs. Or rubber tires. Hatboxes, even."

Phil laughed. "Those are some of the nicer things. Once somebody found a Portuguese fisherman's head in one of 'em." He paused reflectively as the waiter and I stared at him. "Although how they knew he was Portuguese stumps me. Couldn't've been by his clothes."

I rolled my eyes. Fortunately for me, he stopped there. Phil was dark and athletic, totally unlike most of the physics types over at Oceanside U., and his stomach was the proverbial cast iron. I, on the other hand, was an insulin-dependent diabetic with more stomach than I wanted and a major known as "pre-anthropology." Phil could live on cheeseburgers and milk shakes without any of it showing. I could live on rationed quarter-cups of birdseed and get fat.

Hence I wasn't about to let Phil ruin my chef's salad.

Dorian left. I finished three bits of diced, lowfat ham. "So, Phil. What are you going to try to talk me into this time?"

He smiled, close-lipped, around a bite of double bacon cheeseburger. Watching me, he swallowed. "How'd

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

you know I needed to ask you for a favor?''

''Last year you asked me to tell one big whopping lie to two of your girlfriends. Three months ago you had me write two 'medical' excuses so you could spend finals week in the Gulf of Mexico. Then there was the time—''

He laughed. ''OK, I get your point.'' He tossed a chunk of burger over the rail. The sharks dove for it. I tossed them an oversized piece of lettuce, which they ignored.

''You ever hear of wormholes?'' Phil asked.

''You really like to talk about gross things while I'm eating, don't you?''

''Not that kind. The kind Kozarek likes to lecture about.'' Phil was referring to his least encouraging, but most respected, professor. The woman was internationally famous for her work in something like quarks.

''The ones you get when you travel past light-speed?''

He looked disappointed. ''Sort of, but . . . that's not quite . . . well, no.''

I stabbed half a hard-boiled egg.

''First, you don't have to be going at light-speed, and second—''

''Don't bother. We don't worry about wormholes in the anthro lab, except when they mess up burial remains.''

''You can follow me this far, can't you?'' His question was almost a whine. ''Cripes, this stuff isn't a joke. Why don't people take it seriously? Kozarek even has to hide her stuff from the other profs. I guess she figures they'd laugh at her.''

My brows went up with those comments.

''You know how I found out about this wormhole? I went into her office while she was talking to the secretary. There was a paper on her desk that said a wormhole opens in a certain spot of the desert every other year.''

I finished the egg and two pieces of Swiss cheese before I talked again. Not being very fond of interoffice politics, I figured I'd guide Phil back to technicalities. ''So, what kind of wormholes are you interested in?''

He grinned. ''Interdimensional ones.''

I put my fork down. ''Oh. Sure. Any reason?''

''Of course!'' Phil looked disgusted with me.

''So? What is it?''

''Grad school.''

''Oh,'' I said. Phil and I were barely into sophomore year.

''No kidding. Maybe you aren't sure where you're headed, but I know what I want to do when I grow up. And I don't want to have to work as a waiter to pay for it!''

I laughed. ''So you'll go out and find a wormhole, and that'll solve everything? You're crazy.''

''Not really. It might please Kozarek. It would prove some of her favorite theories and make the other profs quit laughing at her.''

''And that would get you funding?''

''Probably. Kozarek's in charge of grad studies, and her recommendation could probably help net me some money.''

I shrugged. I'd avoided learning anything I didn't have to about financial aid.

Phil's tone changed. ''Mark?''

He waited until I looked at him again,

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

which wasn't long. He sounded too serious to ignore.

"Mark, I think I've found a place where a wormhole opens. And I want you to go into it with me."

He watched my face respond to what he'd said.

"I'm not kidding," he added.

"All right," I said after a pause. I'd known Phil since early high school, and he'd always loved to chase goofy ideas around. I figured it would be fun to see where this one went. "So, when do we bop into this wormhole?"

"Well . . . how about on the way home?"

"Oh," I said, reaching for my check. "Shouldn't be any problem."

My wrist bumped my fork, which slid over the edge of the pier and bounced off a shark. Phil and I watched as another shark grabbed it and swallowed it whole.

Not too much later, Phil had me in the passenger seat of his beat-up red Pinto. We had the windows down. Hot sunlight glinted off the blue plastic thermos that housed my insulin, and the black fanny pouch that held my glucometer and supplies was disconcertingly warm. I was concerned that the insulin and test strips would be ruined by the heat.

We passed a few low, mesquite-wooded hills. Phil glanced from the road to me and asked, "Are you familiar with the theory of relativity?"

I glanced back at him. "Just barely."

Something a lot like despair seemed to flash across Phil's face.

"Hey, I'm not a math nut. Just give me the idiot's version."

He looked thoughtful for a few moments before he pulled onto the berm and stopped. Gritty dust billowed up around the car and began to drift off in the slow desert wind.

Phil put his fist under my nose. "See this?"

"Wha—"

"Imagine it's a sphere. The Earth, say."

"Oh. All right."

"Here's where we are, maybe a hundred miles from LA. And here's New York." He touched the knuckle of his thumb, then of his forefinger. "I'm exaggerating the Earth's curvature, of course, but you get the idea. To you, as a driver, the distance between the two cities seems to follow a straight line. But you don't realize that you're actually driving over an arc."

"Well, sure. That's not hard to understand. But what's it go to do with time travel?"

"Space-time is curved in something of the same way. We perceive it as linear, but it really isn't."

I squinted at the sun visor. "You're saying that space is a sphere?"

"Space and time. Or time. And, no, not exactly, but—for this example, yes."

He didn't wait for me to protest.

"Anyway, imagine that somehow you could punch a hole through the curved space, or time, so you would go straight from LA to New York without having to drive over the surface of the sphere." He shrugged. "That's the wormhole."

"Yeah, but how does another dimension come into this?"

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

"The wormhole goes through another dimension."

"Why not just go through this one?"

Phil looked exasperated. "Because then you're just moving through space. You have to move through space and time."

I was about to say that time was passing while I moved through space, but I stopped myself. Obviously Phil understood something I didn't, and he'd gladly spend half the day patiently explaining his ideas to me if I didn't pretend to understand.

"Oh," I said, trying to sound enlightened.

Phil smiled approvingly. "Good." He started up the Pinto again and pulled back onto the road.

We cleared the hills and came to a long stretch of desert. The car shuddered over heat-cracked pavement. I thought about my roasting supplies and asked Phil if we couldn't turn on the AC.

Phil looked embarrassed as he rolled up his window. "Sorry. I was just trying to save gas. You know how expensive it gets."

I shrugged and rolled up my own window. In a few moments cool air washed through the car.

"I'm glad you get the idea of what a wormhole is," Phil said.

I glanced over at him. "Sounds like you're going into Part Two of the lecture."

"You don't believe me, do you?"

"Well . . ." I paused. I could tell his feelings were hurt. "So what were you going to say?"

Phil stared intently at the road as he spoke. "Assuming you have a civilization that's advanced enough, you have everything you need to open a wormhole. All you need is a certain technical setup and the gravity or electromagnetic force to power the whole thing."

I shrugged. Phil glanced at me with bright eyes.

"So far, nobody's been able to actually use a wormhole. At least, not with any proof about it. We pretty much just theorize about them. But I think wormholes are real, and I think they're a lot more common than anyone would guess."

"Which is where dragging me into one comes in."

He nodded. "Right."

"Why not just have someone film you tossing something into the wormhole?"

"I thought of that. Kozarek might think it was trick photography. I need to get some real evidence."

I tried to think of what Phil would consider real evidence.

"With you along as a witness, maybe I can impress Kozarek." Phil laughed. "Hell, impress her? I'll be the most famous sophomore physics student in the century. And all because of her theories."

I laughed. "Sure, Phil."

He drove on quietly for a while.

"I agree with you that it all sounds pretty crazy. But you have to look at other things. For instance, do you have any idea how many people have disappeared in this area? There was that old couple two years ago. And then there are all those periodic UFO scares, like the one four years back."

I shrugged. "UFOs *come* from California."

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

He didn't seem to catch the joke. "Part of what makes the wormhole work, at least in terms of jumping time, is its velocity. One end is fixed in time. The other is moving—being moved—through space-time."

He glanced at me. "One seems to be moving through this area. Over the past ten years, Kozarek has used this area as a field trip for her students. She sends them here to make gravity measurements. The paper she wrote showed charts of those results—and the pattern was unmistakable. There's one spot where gravity changes around. First it gradually gets lighter. Then, suddenly, it returns to normal strength."

"What did the other profs have to say about that?"

Phil scowled. "They blamed it on the instruments."

I was about to argue that maybe the professors knew more about physics than he did when he started shouting, "I see it! Up ahead. It's opening!"

At this point I was getting seriously worried about Phil's sanity. I knew that wormholes through other dimensions didn't habitually open in the middle of desert roads. I also knew that Phil's devil-may-care attitude had gone from amusing to unnerving. Not knowing what else to do, I grabbed the door handle, hoping to jump out at the next stop sign.

Abruptly, there was a period of still, clear darkness. Then things got weird.

I'm not sure I can explain the sensation of having one's hand go around a closed car door. I stared, trying to see what had happened, and got another surprise: I could see through the door. Except I wasn't seeing *through* it, exactly; I was seeing all of it at once. Window mechanisms, the lock, rusted metal interior, exterior paint—everything was visible.

Worse, I discovered that I could see the entire anatomy of my hand. Veins, nerves, bones, layers of skin—all of it was right there. I pulled in my hand and stared at it. When I concentrated, I could focus on the outer layer of the skin, and it looked normal. But that changed as quickly as my focus.

There seemed to be another *direction* to things. I could look, or reach, through/around solid objects. I was blinking and trying to figure that out when it occurred to me that grains of sand were blowing through/around my whole body, and further, that I was beginning to fall through/around the car seat onto the road below.

Fortunately I caught myself and stopped falling. Unfortunately, my insulin thermos dropped through the floor, and my glucometer fell right through the fanny bag, dropped through/around my intestines, and lodged under the seat.

Phil must have managed to keep himself in the seat, since the car kept moving. The sandstorm thickened, and grains began to sting my nose and crackle in my mouth.

I heard murmuring voices in the wind. Someone was screaming, and someone else laughed and said something. Crazily, I saw a blue Chevette pull past us. Then Phil's voice broke through: "Just hold onto it!"

"Hold onto wha—" I cried, but my voice choked out in the sandy wind.

Then suddenly the wind was gone, and everything was dark and still.

* * *

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

When I came to, I felt dizzy and nauseated. Strange sounds filled my head. It seemed as if the world were full of foghorns, each competing to be heard over the others.

Between blasts I heard Phil shuffling in the driver's seat. He was probably spitting out sand.

I opened my eyes and struggled to focus them. The windshield and windows had been frosted by the sandstorm.

My eyes roved over the dashboard. It looked normal. Several hard blinks didn't make it any different. Finally I worked up the nerve to touch it. I was relieved to notice that the strange direction that let me reach through/around things was gone.

A foghorn sounded a few yards to my right.

Phil jumped. "What's making that noise?"

"I don't know," I answered. Without thinking, I started to roll down the window. "Let me look."

I glanced out. "Ah, Phil—"

It's amazing what adrenaline can do. All I could remember later was that one moment I was in the car, and the next moment I was forty feet up a tree, screaming back at Phil. He'd stopped at the branch just below me.

Beneath both of us, a huge crested duckbill made a foghorn sound. Its head alone was four feet long. Nearby, several others of various sizes formed a half-circle around our tree, eyeing it with apparent distrust.

It took a moment before my vocal chords would work again. "Phil? How do we get back home again, Phil?"

"Well—I didn't expect we'd actually go through—I thought we'd just see inside the wormhole," he said, and laughed half hysterically.

I tried not to wet my pants. "We're not stuck here, are we?"

"Maybe," he said. Then he saw the look on my face and cleared his throat. "But, well, the wormhole must be controlled by somebody."

"Who?"

"I don't know, but they obviously keep it moving on a regular path."

"Oh, obviously." I glared down at him, and he shrugged. My arms started shaking despite my firm grip on the branch. "This is an important question, Phil: How long until it comes back?"

"Maybe . . . two years?"

I relaxed abruptly against the branch. "Oh, great."

"Shit," Phil said. "I forgot. Your insulin—"

"It fell out of the car. But don't worry about that. I won't live long enough to need it. You forgot to warn me that we might be gone for a while, you moron! What are we going to eat?"

"You have to eat?"

I gripped the branch again to keep myself from hitting him. "If I don't eat in a few hours, I'll go into insulin shock and die before tomorrow."

Phil's eyes glazed slightly. "Die?"

"If I don't eat enough to cover the insulin I took before dinner, it'll throw me into shock." I glanced around wildly. "But what the hell. If I can't get my insulin back, it won't matter. I'd just die a little slower instead—maybe a day or two."

Phil looked worried. "Jesus. All that because you might miss a meal or a shot? Why didn't you ever mention that?"

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

"When was it ever a problem?" I looked over at a fifty-foot duckbill. "What're we going to do, man?"

"Well . . ." Phil scanned the area, then pointed at a pile of rotting leaves and twigs about fifty feet from the base of the tree. An enormous duckbill guarded it. It stood alert with its tail straight out, balancing its weight like a seesaw on legs, staring at us.

"I bet that's its nest. It must be full of eggs," Phil suggested.

"How are we supposed to get them?"

"Well, one of us will have to—"

"You aren't going to say you expect me to—"

"Well, *you're* the one who wants to eat!"

I turned to glare at him, lost my balance, and fell.

A chorus of startled foghorns greeted me as I hit the ground.

The dirt must have been softer than it appeared. A glance up at Phil told me I'd fallen more than forty feet. Remarkably, I hadn't broken anything.

A second glance up gave me two vital bits of information: first, Phil was climbing down to meet me; and second, the duckbills were running away from us. Even the one that had been guarding the nest had turned tail.

Phil hollered as I sprinted for the nest. I ignored him. My interest in surviving the rest of the day overruled my curiosity about what he wanted.

The nest was loosely put together. Basically, it was a hole covered with dead leaves and twigs, and it was ridiculously easy to dig up. I had just unearthed three eggs when Phil grabbed my elbow. Adrenaline must have been running my brain, because I turned and swung. He staggered back as my first connected squarely with his jaw.

I turned back to get the eggs. My feet were slimy with the contents of two, which I had stepped on and ruptured while I was socking Phil. I barely had a chance to grab the unbroken one before Phil was up again. He grabbed my arm and yanked.

By this time I was shaking. I felt light-headed, and I wondered why my feet didn't seem to connect well with the ground.

"We've got to get back into the Pinto," Phil was yelling.

I shoved the egg into my shirt and let him drag me along. He opened the passenger door and shoved me in, then ran around to his side.

"You OK?" he asked, after we were both safely in the car.

I went through my mental checklist. "I'm not sure. Let me test my blood." I reached for my pouch, then remembered that the glucometer had fallen through/around me and the seat. I reached under the seat and found it.

When I sat up again, I glanced over at Phil. He was as pale and shaky as I was, probably because of our brief fight. Or the wormhole. Or maybe the dinosaurs.

"You don't look any better than I do," I told him.

"The gravity," he gasped. 'Did you notice?"

I lanced my finger and dabbed the blood on a test strip. "What about it?"

"It lightened up. That's why you weren't hurt when you fell. They must be trying to get the wormhole back."

I daubed the test strip on a tissue and

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

put it into the glucometer. "Who's 'they'?"

"Whoever's operating it."

"Somebody's operating that thing?"

"Somebody would have to be, if it's coming back for us." He glanced at my glucometer, which was beeping to indicate it was completing its program.

I glanced over at Phil. "You mean maybe we can get back?"

"Maybe," he said. He glanced at the glucometer. "What's that mean?"

I glanced down. My blood sugar was 382. "It's supposed to be 100," I told him, putting the glucometer back in the bag and zipping it in.

Phil looked worried. "What does that mean?"

"It means," I said steadily, "that you shouldn't drag me into wormholes that dump me into dinosaur nesting grounds."

He stared at me blankly.

"The stress made my blood sugar go crazy," I explained.

"Oh. You're not going to die now, are you?"

I stifled an urge to belt him again. "No, Phil. Not now."

"Good," he sighed, and looked back at the windshield. His eyes widened. "Hold on," he barked.

Before I could protest, he'd backed us up several yards. I glanced ahead and noticed a faint glow in the air. Abruptly, it opened into a sort of hole in the landscape. My eyes crossed when I tried to look into it.

Phil shifted gear and gunned the motor.

"Hold it," I said.

"What?"

"I have this thing," I said, and held up the egg.

His eyes bugged out. "You have a dinosaur egg?"

"Didn't you see? What I was going to ask was, if I don't put it back, will the future change? Or is it too late? I stepped on a couple others, you know. I once read a story about a guy who went back to the time of the dinosaurs and stepped on a butterfly, and—"

The hole ahead of us began to fade. Phil made a funny noise, then gasped, "No! For God's sake, Mark—"

We rolled forward. Things got dark, and then the car was once again enveloped in dust. The grains began blowing through/around us.

"—just hold onto it!"

I thought I could see something through/around the frosted window, but my attention was grabbed by events in the car. The egg had started to slip through/around my lap. It rolled over the seat, bounced along the floor, hit something, and then dropped through/around the floor and into the blowing sand.

"Damn," I muttered. I gripped the edge of my seat, carefully avoiding the around direction, and managed to stay put.

I glanced over at Phil, trying to focus on his skin layer. "I can't hold onto it," I told him. "Things don't work the same in here." Then my mouth got full of grit.

Abruptly, something intruded on my mind. I can't say the word was spoken, but I distinctly got the impression: *Stop.*

Phil must have gotten the same impression, because he hit the brakes. My head started to go through the dashboard, but I was able to pull it back in.

Phil hadn't been so lucky. I caught

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

a glimpse of his feet disappearing through/around the windshield.

Moments later, something yanked me out into the blowing sand. Then Phil and I were shoved together.

The "voice" returned:

Stay together. Do not move.

"Where is this? What are you?" I screamed.

You will return to your own time.

"Wait!"

Before I could cry out twice, I felt a jolt. The air became hot and still. I blinked. Things looked normal again. Phil and I had been deposited in the middle of a desert road.

Phil turned to look at me.

"What the *fuck,*" he said.

We hitched a ride to the nearest gas station. We argued for ten minutes about whom to call before either of us realized that neither of us had a quarter. Or a wallet. Or a credit card.

"They must have fallen out while we were in a higher dimension," Phil mused.

I abruptly realized that I was in the middle of a desert without money or food. My insulin was gone. Fortunately, my glucometer and supplies were still safe in my bag, and I had another bottle of insulin in the fridge back at the dorm.

It occurred to me that there was no way to know how long Phil and I had been back with the duckbills. Nor could we be sure we'd returned at the same local time we'd left.

My treatment schedule was, in other words, shot.

"Did you get the dinosaur egg?" Phil asked.

"No. It fell through my lap. Listen, Phil, do you know what time it is? Locally? Or, uh, how long we were—"

"You dropped it?" Phil sounded horrified.

"I didn't drop it. It dropped through me."

Phil nodded. "I noticed things did that, in there. We have to remember that a closed space in this dimension may be wide open in the next highest one. Ones, I mean. Wow, I bet that sand was blowing right through our bodies. . . ."

I blinked at him. Phil could go off on goofy tangents with no encouragement at all. I asked, "If the sand was going through us, then why don't you and I look like cubed steak?"

I let him wonder about that while I found the attendant and tried to convince him that I really did need to make a "free" phone call.

Needless to say, nobody believed us. I told one of the guys in the dorm, just to see how he'd react. He thought the business about the dinosaur egg falling through/around my stomach was interesting. Then he forced me to drink a whole can of pop, because, he insisted, that's what I'd told him to make me do if I started "acting weird." It took me three days and four extra shots to get my blood sugar back to normal.

The physics people didn't believe Phil, either. Kozarek was so upset about him snooping through her papers that she nearly had him thrown out of school. He didn't exactly secure her recommendation for grad school.

Phil had a hard time dealing with what had happened. Kozarek wouldn't even speak to him. His other professors

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

made it clear that they had no interest in his wormhole stories.

Not too much later, a blonde named Linda turned into Phil's one-and-only, and he found that she considered stories of dinosaur eggs falling through/around people's stomachs just a tad odd. He didn't want to scare her off.

He tried to forget all about it.

Even so, I wasn't worried. Phil had said that the wormhole reappeared in the desert every two years. I knew that he might get waylaid by other projects, but it was pathologically impossible for him to forget it. And Linda would have two years to learn that Phil and his goofy ideas were inseparable.

So I dove headfirst into my studies of physical anthropology, and Phil got lost in his equations for a couple of years.

And I waited.

My life changed a lot over those two years. I soon had little time to worry about the wormhole. Not a month after Phil and I had gotten back, I noticed some wavy spots in my vision. I soon learned that I'd need laser treatments in both eyes.

It was funny, but the news about my eyes seemed to shake Phil almost as hard as it hit me. I mean, I'd had sixteen years to accept the possibility. Good control can help a lot, but it can't always stop retinopathy; the tendency to get it is genetic. Phil hadn't known that. All he knew was that I spent half my life babysitting my bloodsugar. He was genuinely surprised to learn that my eyes were in danger.

Once I explained the facts, Phil was really understanding. He even volunteered to drive me to and from the weekly treatments.

After a lot of arguing and paperwork, I got my insurance company to pay for an insulin pump. However, despite the better blood sugar control it gave me, my kidneys started leaking blood and protein a year later.

I tried not to let it get to me. But then, one day I went shopping, and I saw a package of pork kidneys in the meat section. I picked them up and stared at them for several minutes. Then I went home and broke a whole set of dishes against the kitchen wall.

Phil called right after I did it. He really seemed sympathetic. We talked a while, then he came and helped me clean up broken dishes.

At first I thought everything was all right with Phil, but I guess my dish-tossing escapade must have scared him. He sort of disappeared for a few months. When I asked, he said he was busy with his equations. I didn't press the issue. After all, my kidneys weren't *his* problem. Besides, he still phoned every so often, so I was sure he'd contact me before the wormhole returned.

The dig was only moderately interesting—a few skeletons near one of the volcanic formations a few miles from town. I'd chosen to work this site because it was near the highway where Phil and I had originally entered the wormhole.

I was uncovering the remains of an arthritic, fortyish female Amerind when Phil showed up. He was clearly uncomfortable with the idea of approaching me. He hovered around the site, apparently thinking I hadn't seen him.

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

I had to laugh. In truth, I hadn't seen Phil in months—he'd been wrapped up in senior classes. He referred to them as "The Time Eaters," since he spent one hour in the classroom and four or five doing the homework. Most of the rest of his schedule went to Linda, now his official fiancée. Only rarely did he have time for friends.

I can't exactly say why, but somehow it seemed natural for Phil to show up while I was picking through a skeleton.

"Hi," I said, and tossed him a pelvic innominate. "Hold this."

"Uh, OK," he said. He stared at the bone. "Cute."

"Probably was. She had four or five kids."

He nodded. I glanced up. Despite my imperfect vision and heavy eyeshades, I could tell that he needed to talk. I stood to face him.

"Wow. You've lost some weight, Mark," Phil commented.

Involuntarily, I glanced down at my now-flat stomach. "Yeah. Thanks."

"You've moved up in the world, too. I see they've begun to trust you with dead people." He handed back the bone.

I laughed.

Phil nodded and glanced at the tube connecting me to the pump. Then he looked up to meet my eyes. "Want to go to the waterfront?"

"That little restaurant on the pier? The one with the sharks?"

"Yeah."

I checked my watch. "I'm supposed to eat in an hour or so."

"Shouldn't be a problem. I need to stop by my apartment to get some equipment."

"How long?"

He shrugged. "Half an hour, max."

I adjusted the pump to deliver the bolus, a little spurt of insulin that would help metabolize lunch. Meanwhile, Phil turned toward his Chevette. My color vision had become questionable, but in the desert sun the car looked pale silver.

I stepped after him, then stopped. "Phil?"

He turned to look at me.

"You're going to ask me to go into the wormhole again."

He turned away.

"You didn't think I'd thought about it. But I have. I've stored up supplies," I said.

He turned around, his body tense and his eyes full of hope.

"I have a couple of years' worth," I said. "Let's go."

His shoulders relaxed. But he stared at me uncertainly. "They might fall out, you know."

I shrugged. "You only live once, man."

Phil blinked as if he were about to cry. Then, inexplicably, his expression changed, anad he got that same impish smile he'd had two years ago.

He was still grinning as we rode over the bumpy desert road. "You knew I'd show up, didn't you?"

I shrugged. "I knew you wouldn't be able to forget the wormhole."

He nodded.

"Any luck with the physics department?"

"What, funding?"

"No. Credibility. Does anyone take you seriously?"

He gave me a comically despairing stare. "Wormholes? Theorizing about

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

them is one thing. *Proving* they exist is another."

"Can't that all be done on paper?"

"It has been, to a point. Except that the wormhole we were in doesn't quite fit the going theories. For one thing, it's too big. For another, it moves around too freely through time. And then there's the problem of causality." He frowned. "Plus, I can't figure out how we got back last time. Somebody must have rescued us. I want to find out who."

He slowed the car and half turned toward me, his expression either desperate or earnest. Or both. "Besides, I'm going to go nuts if I can't prove this. Kozarek wouldn't recommend me for grad school, and I want to make her shrivel up and turn green."

We laughed for five minutes.

"So," I finally said, "obviously the only thing to do is jump back in and hope we don't end up dodging dinosaurs for two years."

"Well . . ." He looked at me and started laughing again. "Yeah."

I nearly told Phil he was crazy, but then it occurred to me that I was leaving a perfectly safe Indian dig to go into a wormhole. With *him*.

I'd left the dorm for an apartment the previous year. We stopped at my place first. On the way, I popped a quick blood sugar. I was running about 95. Not bad, but I'd have to eat soon.

I had Phil wait in the car while I went in to get my supplies. My pharmacist once commented that he thought I was the most conscientious diabetic he'd ever seen. Over time, I'd stockpiled nearly $4,000 worth. I might have balked at spending so much, but I reasoned that I'd need the stuff regardless, so the money wouldn't have been wasted even if Phil hadn't shown up on time.

I glanced outside. Familiar palm trees swayed near my window in the dry wind.

Was I nuts to be doing this?

Did it matter?

I left the apartment door open and went into the kitchen. I started tossing supplies onto the table. Twelve bottles of insulin in a plastic thermos. Glucometer. Test strips. Calibration strips. Tissues. Spare batteries. Rubbing alcohol. Swabs. Finger lancets. Pump tubes and needles. A few hundred disposable syringes, just in case the pump broke. Several days' worth of food. And twelve rolls of hard candies, for low blood sugars.

I glanced at the pile on the table. Had I forgotten anything?

It occurred to me I might need a saucepan, so I could boil and sterilize things. I went and got one, putting it next to the syringes. Then I went to the bathroom and got the first aid kit. While I was there, I grabbed a few antihistamines, and those leftover penicillin tablets from last month, and—

Phil's head appeared in the open doorway. "You've been in here almost half an hour, man."

He looked at me, then at the pile of supplies. "Shit," he breathed. Then he half-smiled. "Maybe we should rent a van?"

My stomach rumbled. We were about halfway back to Phil's place, going along the same road where the wormhole had opened two years before. I thought about the restaurant, then about

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

how Phil and I had gone into the wormhole last time. That led me to think about the technicalities of the whole business.

"Uh, Phil? Last time you said something about how closed spaces don't work in higher dimensions, right?"

"Yeah. And you asked why we didn't end up looking like cubed steak because of all the sand blowing through us."

"Right. So? What's the answer?"

"Maybe it has something to do with the dark place we go through before we get into the wormhole." He shrugged apologetically. "I'm really not sure."

"What?" I thought about that for a second. "You mean you can't figure out how we survived, but you still want to—"

Phil interrupted me. "I can't even figure out why our guts didn't fall out, to tell you the truth." He looked thoughtful. "Probably because they're all attached," he mused. "Like a Mobius strip stays intact in this dimension, even though it's really two-dee . . . hm. That's interesting."

My face felt hot. "You didn't even know if we'd make it out alive last time?"

"I hadn't really thought about it," he said sheepishly. "Whoever runs the thing obviously knows more than we do, right? So why worry about it?"

"Why in hell did we go in the first time, then?"

"I guess I didn't really think it would be there. Besides, I just wanted to impress Kozarek. Geez, as if *that* worked." He rolled his eyes. "I never really expected to go into the wormhole, Mark. I was as surprised as you. But, God, the theories were such fun to work with, and Kozarek's paper—"

He stopped as he got a look at my face. "Hey, it didn't matter, Mark. I mean, we made it through OK."

My face was burning. "You don't spend much time thinking about what you do, do you, Phil?"

He started muttering a reply, but I didn't stop to listen.

"No, I mean it. You drag me into a wormhole that knocks us several million years into the past. After all, you didn't really expect the thing to be there, even though a professor's paper said it would be. And so what if we might have come out of it holding our guts in our hands? At least we'd impress—what's her name? Kozarek? And then you'd have gotten her to say nice things about you for the grad studies folks. *Jesus*, Phil!"

Phil had stopped the car while I was chewing him out. He sat there, his foot on the brake, and stared at me with the oddest expression.

"Don't you give a shit about me? You can go gallivanting off into wormholes and risking your life if you want, but leave me out of it!" I wanted to quit, but the words seemed to be self-propelled. "I fight too damn hard staying alive to let you put me into that kind of danger."

With that, I stopped. My head felt funny and my stomach was getting upset. I was blinking back tears. Damned if I was going to let *him* see them.

To my surprise, Phil got off the brake and hit the gas. The rear tires kicked back some loose rocks. Then the car seemed to lift off the road for a moment. With a shock, I realized that we were in low gee.

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

My mouth went dry. I glanced at Phil, then at the road.

Abruptly, the rear tires hit the pavement, and we shot ahead.

Without expecting to, I started laughing hysterically.

My laughter died when I felt sand stinging my arms and face.

The glucometer bag started slipping through/around my stomach. I grabbed it, remembering that holding things a certain way kept them from moving in that bizarre new direction.

From outside the car I heard, "Just hold onto it!" And from another direction came more laughter.

I tried to look at Phil. Sand blew right through my eyes, making it hard to focus, but somehow I caught sight of a few of his internal organs. They were in the general area of the driver's seat. Apparently he had figured out how to stay put, too.

I turned and focused my vision past the window glass. A few yards away, there was a hole into the three-dimensional world. Inside it, several huge, snake-necked creatures grazed placidly in a forest.

My reaction was purely emotional. I wanted to go there. It might not have been the right time, but it was the right world.

I turned to beg Phil to take us safely into the herd of dinosaurs, but he was gone.

The car had stopped moving.

It occurred to me then that Phil might have fallen out and gotten lost. I might never find my way out of this weird place.

I howled.

A moment later, I stopped howling. Somebody was laughing. I opened my eyes—purely a formality, since I could see through/around my own eyelids anyway—and gradually got a focus on . . . myself. He/I was reaching through/around the car window to grab my arm.

Absurdly, I wondered how I could stand being out there in the wind, and why I looked so happy. I was about to ask about that when he backed away, still laughing.

Before I could react, something yanked my left arm and pulled me through the other side of the car.

"What the—?"

It was Phil.

I'm not usually demonstrative, but I grabbed Phil around the middle. One of my hands slipped and went through him. I replaced it more carefully and got a grip.

Phil dragged me toward the spot where I'd glimpsed the three-dimensional world. The portal was still there. This time the dinosaurs were gone, and the forest had changed to a weed-choked swamp.

I started to jump for the opening, but Phil managed to restrain me.

"Wait," he stage-whispered. "Has to cycle around to the future."

I tried to nod.

Then, without warning, Phil and I were both lurched away from the opening. I tried to see what had happened, and was greeted by the sight of several fleshy blobs floating around us.

A globule of flesh with something resembling a mouth moved between Phil and me.

"Wait," it said gently.

"Got to get—into the future," Phil

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

choked. The sand storm was especially thick near the opening.

"You need to return to your proper time," the thing said. Its words had an unmistakable Western American accent.

"Want to go ho," I said, unable to say more.

"Dust," Phil said. "Hard to talk."

One of the blobs produced a black plastic device. Instantly, an invisible tent seemed to form around us, holding off the sand.

I blinked. The visual distortions had stopped, at least within the confines of the "tent." Phil looked like his usual, three-dimensional self. But the blobs were still with us.

Phil coughed and cleared his throat. "How'd you do that?"

"I worked with the local gravity," the blob explained.

Phil's eyes were getting big. "How—?"

I clapped a trembling hand over his mouth. "We need to get back home," I told the nearest blob.

Phil pushed my hand away from his face. "Don't listen to him. We need to get into the future. I mean, into *our* future." Then he giggled—not a sound I was used to, from him. I glanced at him, irritated.

The globule laughed in a manner that might have been intended to reassure. "I think I understand," it said.

"Would somebody explain this to me?" I yelled.

Phil stared at me, as if startled by my tone of voice.

Three of the globules moved together to shove Phil and me back into our Universe.

* * *

We landed on our backs in a field of mown grass. The Chevette was nowhere in sight.

"Damn," Phil commented. "I'm getting sick of losing cars."

I raised myself up on my elbows. My arms were shaking. Glowing spots filled my vision. I glanced at Phil.

Had we eaten lunch before we dove into the wormhole? I couldn't remember.

"Mark? Are you all right?"

I looked at Phil, and hated him. "Why the hell did you get us into that wormhole?"

"What? You said you wanted to go."

Tears started forming, which frustrated me. I didn't want to cry. Why was I here? Then I remembered again that I hated Phil.

"You stupid son of a bitch," I said. I started untying my shoes, not knowing why, but it seemed perfectly reasonable.

"What are you doing?" Phil asked.

"I'm . . ." I couldn't say. I felt angrier at Phil. "Why did you do it?"

He looked puzzled.

What a moron!

"Do what?" he asked.

"Do," I said. "Do—"

The first thing I noticed was a strange smell, spicey yet vaguely medicinal. I moaned and moved my head. Then I wished I hadn't. It pounded so intensely that I was afraid to open my eyes.

Something brushed my shoulder. "Are you with us?" a reedy, female voice asked.

I opened my eyes. Bright lights seemed to be everywhere, but somehow they didn't hurt my eyes. Even so, I

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

couldn't get much of a focus. All I could tell for sure was that this was the three-dimensional world.

Dimly, I made out a figure in an isolation suit. The thick faceplate shimmered with reflected light, faintly blue. Apparently I was in an examining room.

"Where's Phil?" I asked.

"Your companion is well. You'll see him soon." The suited figure patted my shoulder again with the same light touch. "For now, just rest."

I rolled on my stomach and closed my eyes.

"Do you know the date?" she asked.

"I haven't the flamingest idea," I said.

She laughed. "Do you know which planet this is?"

I raised myself on my elbows, which were no longer shaky. "You're not making fun of me, are you?"

"No," she said. "We can tell that you're from the past." She paused, then added, "Why would I make fun of you?"

"Well . . . because . . . that sort of question wasn't something we asked seriously in nineteen—in my time."

"I see." She turned away to do something with a tray of instruments.

My headache was receding quickly. I sat up, then swung my legs over the side of the table, flinching a little from a twinge in my lower belly.

"Sometimes people or animals come to us through the wormhole. Whoever operates it apparently lets it empty out here." She turned toward me. "You'd have to be from the late twentieth."

I nodded.

"Easy enough to tell. From the opening in the Mojave, right?"

I nodded again.

"And, you were a diabetic, using insulin." She touched the injection sites on my thigh and upper arm, then pointed at the spot on my stomach where the pump needle had been. "That's what caused the low blood sugar."

"Yeah," I said. Then I felt a familiar sting of alarm. "Where's my glucometer? And the pump—"

"You won't need them."

"What?"

"You're cured."

I tried to talk, but couldn't. She might as well have hit me with a board.

"Your friend Phil assured us you'd want medical treatment. Your kidneys should repair themselves within the hour. We've grafted cells into your eyes, and done some nerve work. Your body should be back to normal in a—" she paused, as if calculating—"*week* or two."

She finished whatever she had been doing with the tray and turned toward me again. "I hope you're not offended?"

I fumbled for words. "It's going to be, uh, a big change," I said.

"I'm surprised at your reaction," she said. She pulled at her helmet. "Phil told us you came to be cured. I would think you'd be happy."

"I . . . am. I think."

She removed the helmet and put it on the table next to the instruments. Despite the fuzziness in my newly repaired eyes, I could see that she had only wisps of pale hair. Her head was oversized, and her skin was pale and moist-looking. She stared at me closely with enormous, black, almond-shaped eyes.

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

LICENSED TO UNZORG
ELECTRONIC REPRODUCTION PROHIBITED

I stared back. "Are you human?" I blurted.

She laughed. "I suppose you could say so, yes."

I blinked a few times. You've . . . *evolved*," I finally said.

Overall, the reaction to Phil and my appearance was ambivalent. People were kind but disinterested. Oh, we were given everything we needed. Comfortable living quarters were procured for us within sight of the field where we'd arrived, and food was provided.

Yet, socially, it quickly became clear that Phil and I didn't belong. We looked different, for one thing. While we were in quarantine, an unusually honest nurse told me that my physical appearance was considered frightening. More than this, however, she explained that my "aura" was distressing. "Disconnected," she'd said.

Try as I might, I couldn't believe our social unpopularity was a result of our "auras" being "disconnected." However, her words told me there was a belief system in her world that made no sense to me or Phil. And besides that—we looked scary, too.

To be sure, subsequent weeks in that changed world weren't unpleasant. We were given translation units that made learning the language unnecessary. And my eyes gradually healed. One day I hired out a small antigrav so I could float over a few treetops. Another time, I traveled for hours on the public systems, visiting all seven continents one day. I went to museums that were almost like magic shows.

I don't know how to describe what the people were like, though. Everywhere I went I was treated kindly and cordially. It was as if everyone felt obligated to make our stay convenient.

I hated it. Somehow, I just didn't feel *welcome*.

The people were thousands of years ahead of Phil and me. I had to wonder what had happened to separate me from them. The gene pool seemed to have been limited—every individual had the same big eyes and slender body. Even so, that explained nothing.

It was just that something *felt* different with those people. Was it because of thousands of years of evolution? Had they used genetic engineering at some point, maybe?

Why did I feel so excluded?

One night while I was sitting in my private rest pit, those particular thoughts had been bouncing through my brain.

Abruptly, it hit me that the people weren't the problem. Not at all.

I walked into the main room and looked at Phil. "I want to go home."

Phil sighed, blinked, and leaned back against cushions in the resting pit. A mild breeze from the aeration vents washed over us. Palm fronds in the central planter waved gently.

"Don't you like it here?" he asked.

"The people here aren't the same as we are. Everything's different. Even my *body* feels different."

"You're complaining?"

"No way. But . . . hell, Phil. Don't you even miss Linda?"

His arms went limp. "Sure I do."

I jumped at the vulnerability. "But you think bug-eyed women are starting to look good?"

He reddened. "Is that all you can worry about, Mark?"

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

"I want to go home, Phil." I was surprised at how loudly the words came out.

He jumped out of the resting pit to face me. "Look. It'll probably be two years before we can leave. *If* we can leave. If they let us!"

We exchanged a long stare.

"I want to look outside and see people with whites in their eyes," I said. Against my will, tears formed, and I couldn't stop them. "I miss that stupid white squirrel that nests in the gutter near my bedroom. I want to say good morning to my fat old landlady. *I want things to be normal again!*"

Phil slammed his fist against an aeration vent. "What should I have done, man? Stayed back there and watched you fall apart? I'm here because of *you*, Mark! So stop complaining."

"I'm not complaining! I'm just. . . . I'm just. . . ."

"You're just going to have to get used to it."

I took a deep breath, then nodded.

"It's OK, man," he said.

My legs felt shaky. For once, I knew it was just nerves, not an insulin reaction. I walked back to my room and eased into my private rest pit. I tapped a few commands into the minicomp and waited.

The ceiling cleared and focused on a view of the night sky. I was startled by the clarity of it. I was reminded of a time my family had gone camping in the Sierras. I was about six. Looking at the stars now, I remembered the smells of pine trees and clean, chilly air, and the sound of a cold, rushing brook where we'd caught trout.

Mom had taken me to a clearing late one night. We'd sat and watched the stars. That was the first time I had ever seen the Milky Way.

Now I could see the sky as clearly as I'd seen it then. Constellations stood out bright and strong. Individual stars glinted in the pale mist of the galaxy. I could even tell what colors they were.

Phil's voice intruded on my memory. "They're something to look at, aren't they?"

He stood in the doorway. His face was clearly visible in the dim starlight.

I nodded. "I haven't seen like this for . . . a very long time."

After a moment I added, "I'm grateful, you know."

"You really want to go back, don't you?" Without waiting for an answer, he went on, "I do, too. Thing is, I don't know if we can. I'll ask some of the physicists, tomorrow."

Before I could respond, he disappeared.

I stared at the stars for hours.

Phil ended up talking to a whole council of physics experts. I'd tell you what they said, but I didn't understand a word of it, even though they used a translator.

In the end, the scientists said they could create a space-time wormhole for us—

—in about three years. But it would take six years to get far enough away from the Solar System to make one, since it would require enormous gravitational manipulations, and they couldn't be knocking the planet out of orbit, could they? Oh—and we could only use the wormhole to go forward in time.

The senior council member bright-

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

ened as the translator told us, "However, we can provide power to the wormhole using storage batteries, which we have created using the newest theory . . ."

Phil didn't see the cameras panning in on us to capture our reaction to the physicists' news.

He looked disgusted. "You mean you guys haven't gotten past the stuff we were thinking up in the nineteen-*eighties?*"

I nudged Phil, but he ignored me.

"You mean in all these thousands of years you people couldn't even figure out how to build a better wormhole?!"

They were not amused.

We ended up spending most of the two-year wait for "our" wormhole on a sparsely populated moon resort.

We returned to Earth the day the wormhole was due back.

The media, we learned, routinely covered the return of the wormhole. It was something of a ho-hum, filler story. Apparently Phil and I gave them something to hinge a story on, because hundreds of tiny remote cams buzzed like flies at the edge of the field. We pushed past them and walked to the center, waiting.

Sunlight filtered through patchy clouds. It felt warm on my skin. I squinted up at it.

"Phil?"

"Hm?"

"Were you able to absorb much of the scientific stuff from this time?"

His reply was curt: "No."

"You either, hunh?"

"I learned a few things here and there, sure. But everything that they're working on now. . . ." He shrugged. "It's like—"

"—being an alchemist in a nuclear fusion facility. I know. Same thing with my field. I went through the lunar library. I couldn't even *relate* to the writings of their anthropologists." I sighed. "But then, that's no surprise. I can't relate to the people here."

Phil laughed dryly. "I'm not even sure they're people." He shook his head, then went on, "The best I've been able to do is look through the physics-for-idiots texts they give school kids. And I even get into trouble with those. Every time I think I know what they're talking about, up comes a reference to some other field. Then I have to look up the reference, and I find out it doesn't make sense to me, either."

"I wonder how far into the future our wormhole goes," I said absently, staring into the field.

"You're asking me? Mark, whoever's bouncing that time-tube around knows more than the people here do. These folks are still working with stuff we theorized in the late eighties."

I thought about that. It made me feel dizzy. My head swam. I opened my mouth to say something like "yeesh," but I didn't get the chance. The wormhole had opened.

Sand began to blow through/around my body as several flesh globes approached me.

Phil's first statement after the blobs put up the invisible tent was, "You're right on time."

"You surprised me," the blob nearest my right ear replied. "I wanted to

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

come back for you sooner, but you weren't in the field."

Phil's eyes were getting wide again. "You mean you can control this thing that well?"

"Of course we can."

"How? How?"

The talking blob disappeared completely for a moment while the other blobs rearranged themselves. Then it reappeared by Phil's shoulder. "Your concept of the universe doesn't allow for ordinary paradoxes. My explanations wouldn't make sense to you."

"But—"

"Even if you could be made to understand, the knowledge would be useless to you in your own time." The blob turned to me. "Take him to the opening."

The invisible tent dissolved. I started dragging Phil toward the opening of the wormhole.

About then, I noticed a blur some distance away. Focusing my eyes, I could tell that its outer layer was red. The screech of bad brakes told me it was Phil's Pinto.

I wasn't sure, but it seemed to be coming toward us.

"Hold it, Phil," I shouted.

We waited until the red blur receded into the blowing dust. Phil squinted after it.

"Come on," I shouted. "We have to get out."

We stepped toward the opening, then spun to dodge an oncoming Chevette. Phil said something indistinct as I shoved him along.

The blobs showed up behind us. I glanced back at them. Phil was still staring after the Chevette and the Pinto.

"Man! Seems like everything happens at once in here," I yelled.

Then two of the blobs pushed us out of the wormhole.

"That's because everything *does* happen at once in there," Phil said.

I crouched in the road, rubbing my knee, which had landed on a rough rock. Wind blew a few grains of sand into my eyes. "Oh, please," I moaned, and spat.

"No, it's true. That's why there was such a sandstorm in there. Eons and eons of blowing sand and dust and bugs—"

I spat again. "Can you hold off the lectures?"

He stopped, then blinked and laughed slightly. "Hmph. Well, you're in a bad mood for a guy I dragged thousands of years into the future for a miracle cure."

My shoulders sagged. "God, yes. You did do that, didn't you?" I looked down at the pavement, then up at his face. "And we went, what, forty million years into the past."

"And talked to a creature from a higher dimension, and saw ourselves coming and going." He started giggling. "And nearly ran ourselves over."

His attitude was contagious. I started laughing, maybe just a touch hysterically. "They're never going to believe this, you know," I said. I held my stomach and felt the place where the surgery had been done.

"Yeah. But I'll show Kozarek."

"How?"

He straightened up somewhat. "Your cure. The medical changes in you."

"You know that won't convince

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

them, Phil." My voice sounded serious again.

"Why not? It's on record that you used to have all kinds of medical problems. Now you don't. Somebody will have to notice that."

My lighter mood had evaporated. "Notice? Who? Two or three doctors? And they'll find some way to explain it so it fits what they learned in med school. Or else maybe they'll call it a medical miracle. Face it, Phil. Time travel stories will only get us in trouble. It's not . . . well, *fashionable*, to believe it's possible. At least not now."

Phil sighed. "Not this millennium," he said.

I nodded. "Exactly."

We paused.

"Are you *sure* you didn't find some relic from us in that dig?"

"The Pinto, maybe? Sorry, Phil. Volcanic activity and shifting plates would have obliterated it, if rust didn't eat it alive first." I thought about it. "Besides, both cars are still inside the wormhole, remember?"

"Oh," he said glumly. He stared at the distant gas station. "Yeah."

I stared with him. "That's about two miles off, isn't it?"

"Right."

We started walking. We got about ten steps away when our feet began to slip loosely on the rough asphalt.

Phil looked a question at me.

Looking back, I pointed. "There."

A rift in the scenery was closing. On the road behind us sat two empty cars, a blue Chevette and a red Pinto, both with frosted windshields.

Phil put his hand to his chin and glanced at me philosophically. "Nice of him."

I nodded. "Well, at least we came out of it with a profit."

"Yeah. I'll revolutionize physics with some of what I picked up. *If* they'll listen." He got a small, impish smile. "I bet Kozarek will want to hear about this."

I laughed sympathetically.

"And you, Mark. Medicine will never be the same!"

Shrugging, I turned back toward the gas station. "You told me yourself that cause and effect weren't involved in the wormhole. So how would our discoveries change anything? We've seen the future and the past. Both are already formed."

"For humanity, maybe," Phil said. "But not for you personally."

That made me stop walking.

"Maybe you'll fill a certain role in the formation of the future, and maybe that can't be altered," Phil admitted. "But how comfortable you are while you're filling it is another matter."

I felt him watching my face.

"What's that look for?" he asked.

"Well. . . ." It was hard to answer. "It's just that . . . people evolve at their own rate, you know? It took us four million years to get where we are now. I'm not too sure that's so terrible, either."

"Hunh?"

"People evolve at their own rate. I mean, look at me. I've got my hands full. I've just experienced a miracle, but nobody's going to want to hear about it. And you know how awful it is to hide knowledge. It won't take ten minutes for people to come up with 'reasonable'

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

explanations for what happened to me. You know—I had an unusual gene pattern, or my diabetes was really the milder form all along." Anger flashed through me. "If people aren't ready for what you have to say, they won't listen. It's that simple."

Phil started walking, and I followed him. We went some way before he spoke.

"That's why Kozarek's so unpopular, isn't it?"

I nodded, still angry. "Her worst problem may be that she's right. But the sharks she works with won't let her get ahead. Count on it."

We walked a while longer.

"It's sad," he said.

"What?"

"All the things that won't be invented. All the people who won't be happier than they are, just because things have to happen in their own proper time." He paused, then brightened. "But we will get ahead. The human race, I mean. We've seen proof."

His comment made me smile. "You're right."

We walked a while longer.

"It's going to be weird, adjusting to this new body," I commented. "I'm going from my normal, unusual lifestyle to an abnormally normal one."

"You're complaining?"

I laughed. "*No!*"

He shrugged. I shrugged.

"Maybe we haven't changed the world," I said, "but at least we've come out of things with a tangible profit."

"Well, sure!"

"Yeah. You got your Pinto back."

He stared at me for a moment, then laughed. "That bucket of bolts!"

"And I got that nice Chevette—"

"Now, just a minute!"

"Does the air conditioner work?"

"No, but—"

"Then I'll take the Pinto."

"*Take* the Pinto. Please."

"But the windows are frosted." I shook my head. "We'll just have to go back in a couple of years and get them before their windows got ruined."

"Hunh?" He paused thoughtfully, then caught my eye. He smiled. "Oh. Yeah. OK!"

Laughing giddily, we walked to the gas station. ■

Customer Service or Subscriber Assistance
Please direct all changes of address
and subscription questions to:
Analog Science Fiction / Science Fact
P.O. Box 7061
Red Oak, IA 51591

LICENSED TO GALAXO
ELECTRONIC REPRODUCTION PROHIBITED

Don Sakers

PURGATORY

Crooks learn to take advantage of whatever technology surrounds them. But if they don't keep up, there can be some nasty surprises. . . .

I don't *think* I'm in Hell. The last time I checked, Satan's teleport code was unlisted. But you can never be sure about these things. Science is always making improvements in things, and for all I know International TelePortal signed a contract with the Vatican last week.

So maybe this *is* Hell. Or more likely it's Purgatory, where Auntie Dora was always sure I would wind up anyhow.

What else would you call it? It isn't exactly the dark, featureless limbo she promised. Dark is what you see when you close your eyes, and as near as I can tell I don't even *have* eyes. Or anything else, for that matter. Oh, well, she got the "featureless" part right.

There's *me*, at least. I can think. It takes an effort, like forcing yourself to stay awake in a warm room in the wee hours of your second all-nighter in a row. Much easier to say goodbye to thought and just drift. A lot like watching threevee.

Sorry about that. I faded for a while. Where was I? Right, I don't *think* I'm in Hell. The last time I checked, Satan's teleport code was unlisted. . . .

No, no, no! That's how this place is, even when you force yourself to think, you keep coming back to the same place. Now I know how a cassette feels.

Back to the same place. And how did I get here?

Simple. I punched a code, then stepped through the public TelePortal at First Avenue and Thirty-Fifth Street. I was one step behind my partner, Cufflink Lenny. He's called Cufflink because that's the sort of loot he likes to acquire—every middle-class mark has a drawer of cufflinks, tie-tacks, and tacky

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

jeweled money-clips that he looks at once or twice a year. Any fence will give you good cash money for that stuff, and by the time the mark misses it, it's far too late.

Cufflink taught me almost everything I know about the business—retrieving teleport codes of solid upper-middle-class marks, where to find the best loot, wiping out your traces, dealing with the cops. All I added was my hacker's skill at breaking security codes.

Look at it from the mark's standpoint. You're rich enough to have your own TelePortal, instead of having to stand in line at the public station. Naturally you want the Portal in your house where you can show it off—but you don't want to give people like Cufflink and me access to your house.

So you put in a security feature. Give keys and codes to your closest friends. Anybody who doesn't have the key and know the code gets bounced to the public Portal nearest your house. Fundamentalists, bill collectors, and petty thieves are out of luck.

Cufflink and I aren't petty.

We made out OK. We chose our marks with care, and I wrote a worm that watched each account and notified us when the whole family had 'ported out for the weekend. We live well, Cufflink and me, middle-class at least but without any hassle since we always deal in cash. Three successful jobs a week, and the rest of the time we live in luxury.

Or we *did*, until now.

I stepped through the TelePortal, and the next thing I remember is . . . nothingness.

Damn it, TelePortals aren't supposed to go wonky.

And what had happened to Cufflink? Did he do the job, or was he in his own little piece of Purgatory?

I'm right here with you, Bobby boy.

Cufflink?

I'm here.

I don't hear Cufflink—how can you hear without ears? His words are simply *here*, the way the words of a neon sign hang in front of you. Perhaps they've been here all along, and I haven't noticed until now.

Cuff, where the hell *are* we?

Don't you know?

I have my suspicion. I don't suppose you ever met my Auntie Dora?

What?

Never mind. The TelePortal malfunctioned, that's clear. And now we're stranded alone in—

Alone?

That voice isn't Cufflink. I don't know how I can tell; you might as well say that it *sounds* different, although there's no such thing as sound in Purgatory. Call it taste, call it smell—whatever it is, I know that Cufflink and I aren't the only ones here.

Who's that?

Mary the Mouse, Bobby. Don't you remember me?

Sure I remember her, Mary the

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

Mouse is one of our chief competitors. Half a dozen times in the last year we've gone on a job only to find the mark completely cleaned out. Nothing you could prove in court—of course not—but each time the grapevine said Mary had beaten us to the punch. We'd talked with her, off and on over the years, about combining our talents. Mary was never interested. The Mouse, she says, is a solitary animal.

Fancy meeting you here, Mary, I think toward her.

Upper-middle mark family on vacation for two months? comes her answer. *Do you think the Mouse would let an opportunity like that slip away?*

So you were after the same marks we were?

I can almost feel her shake her head. *Poor Bobby. You still don't understand, do you?*

I feel like a schoolkid when everyone else gets the joke.

Cufflink says, *You don't suppose they'll be back early, do you?*

Mary gives a mouselike squeak of a snort. *Not bloody likely, friend. These marks have been saving for two years for this trip.*

What if they never come back? What if they're in a crash, or they like it so much they decide to stay?

Then we're in deep trouble, Cuffy.

Who? What?

Cufflink ignores me. *Do you think any others will show up?*

We're here. . . . Do you suppose Tank and the Butcher won't be along soon? And Lady Godiva?

If I had a head, I would shake it. What are you two talking about? Tank and the Butcher are from Jersey, Lady Godiva's in Texas . . . they won't use the same defective Portal we did.

There is almost a sense of compassion in Cufflink's answer. *Bobby Boy, we'd better talk.*

But there isn't time, because suddenly a change comes over the world. Everything has been motionless, unchanging—now that's over, and for an instant all Purgatory seems to be shifting, sliding, moving off in a strange direction and carrying us with it. . . .

Mary the Mouse nods. *That'll be Tank coming in. The Butcher will be in a few seconds behind him.*

What do you mean—? I start to ask, then the nonexistent air is filled with the bitter stench of teleportation, and a great voice fills our world. The voice of the upper-middle homeowner who left his house empty for two months. Empty but not untended.

Damn it, International TelePortal could at least have *warned* us before introducing a new service. . . .

The deafening, inescapable voice chants on:

"YOU HAVE REACHED THE KADOWSKI FAMILY. WE'RE NOT IN NOW, BUT AT THE SOUND OF THE BEEP YOUR TELEPORT PATTERN WILL BE RECORDED AND STORED UNTIL WE RETURN. . . . ■

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

The Alternate View

JELLYWARE-FRIENDLY

G. Harry Stine

A computer is normally considered to consist of hardware (the computer itself) and software (the instructions that cause a computer to do what you want it to do).

A third element exists in the system, something that ten years ago I decided to call "jellyware." It's that gelatinous mass of organic molecules which makes up the colloidal computer called the human brain. (Some people have chosen to call this "wetware," but I don't believe that accurately describes the system element. Furthermore, "wetware" sounds like something you'd buy in a swimsuit shop.)

The jellyware is itself a computer whose design principles may (or may not) be similar to those of the hardware. However, it operates by the movement of ions through a colloidal medium. Standard hardware uses the much faster movement of electrons through a crystalline medium. Such crystalline computers need software in the form of operating systems which the jellyware designs. We don't yet fully understand the operating system that runs the jellyware.

Without the jellyware to tell the hardware/software what to do for purposes important and of value to the jellyware, the hardware/software just sits there and eats electricity, its excrement being heat energy according to the principles of the Second Law of Thermodynamics.

My experience with hardware goes back to 1952 when I wrote my undergraduate physics thesis on digital computers. My thesis advisor didn't understand why I was so interested in them and demanded that I include current examples of their utility. The only application I could get my hands on locally was information on how the Weather Bureau (now the National Weather Service) was key-punching the meteorological elements of hourly observations into Hollerith cards (we mistakenly called them "IBM cards" then). I remember the first ERA1103 that we got at White Sands to help number-crunch data reduction problems concerned with guided missile flight trajectories. In 1960, I laboriously programmed an old Burroughs with a plug board to calculate the trajectory of a crew escape capsule fired out of a B-58 Hustler bomber. I bought my first four-function pocket calculator for $98.95 in 1972. And after Dr. Jerry Pournelle showed Robert Heinlein and me what a computer could do for us as a "word processor" using a program called "Electric Pencil," I got a second mortgage on the house to buy a Vector Graphic Model II with 48K of RAM. I wrote a lot of books and *Alternate View* columns on that computer. I still have it, and it works perfectly. But I have to special order the 16 hard sector 5¼-inch floppies for it, and they're getting *hard* to find! (And expensive.)

My son tells me I'm an anomaly. I'm one of the few people of my generation

LICENSED TO UNIFIED
ELECTRONIC REPRODUCTION PROHIBITED

who's at home with modern PCs. But, then, I've always been an anomaly, so it doesn't bother me.

I've written before in these pages about the basic problem of our computerized world: the interface between the hardware/software and the jellyware.

The situation has improved somewhat, however. The "documentation" has become mostly understandable to people with an eighth-grade education. Since most computer users are ordinary office workers, those software companies that didn't make their documentation readable and useful didn't stay in business.

And a lot of work has gone into the jellyware-hardware interface. This has been the result of previous data compiled in a technology known as "human factors engineering." This has been with us for many decades. It's been applied and misapplied to a broad variety of products. Most of these were machines with which human beings interacted to exercise control.

We see the results today mostly in automobile instrument panels (although a lot of good human engineering in that application has been subordinated to the design engineers who have to make a car look like the control room of the Starship Enterprise).

We are beginning to see human factors engineering being applied vigorously in modern jet airliners because the cockpit work load became too much for the jellyware to handle. (Jellyware is a single channel system that can address only one operating command line at a time; it may do some of this by parallel processing techniques, but the result is single channel in nature.) I have an older airplane with instruments not precisely designed for the best human-machine interface. So it was a delight to fly a Cessna Citation with a new Honeywell "glass cockpit." The standard analog instruments aren't there. In their places are cathode ray tubes with color presentations derived from a lot of software and displayed in a manner that makes them easy to comprehend at a glance. In fact, these days a lot of software exists between the control wheel and the airframe of any modern civil or military airplane. Spaceplanes are even more fun, and I've had the privilege of flying the NASP X-30 spaceplane simulator with a full glass cockpit and out-the-window visuals.

Human-machine interface engineering thus far has been mostly confined to devices with which people interacted through touch, muscle kinesthetics, or sight.

In the process of learning how to build machines that people can operate more easily, we have also learned more about ourselves. We know that eye-hand responses are faster than eye-foot or eye-leg responses (yet we still use control pedals in automobiles). We know how to design and build furniture that will support the jellyware's mainframe in a way that permits longer periods of interactive contact. We're very good at this sort of human factors engineering if we don't let the non-engineering designers or marketing men muck it up for non-technical reasons.

On the other hand, maybe the gadget won't sell at all if the engineers build it perfectly to human factors specifications. A consumer product has to appeal at least as strongly to human psycholog-

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

ical factors. It has to be pretty to the eye, leading perhaps to the proof of the verity that beauty is in the eye of the beholder. We had the human factors of automotive instrument panel design down pat 25 years ago. Then the stylists got into the act. Today, those old well-engineered panels are considered as modern as shoes with laces.

Another very important interface area is that between computer hardware/software and the jellyware. The situation is better than it was when I wrote earlier columns about this, but much remains to be done. After all, we've been working on it for only about a decade. We have a legacy of nearly a century of human-machine interface engineering to call upon.

The early software was far from "user-friendly." I had no trouble with my 1979 word processing program. But I knew how to touch-type, I wasn't awed by a keyboard which other engineers and managers believed was strictly for secretaries, and I knew how to decipher obtuse technical manuals. Furthermore, I had some background in computers, although I hasten to add that I'm *not* a computer expert and couldn't even begin to design a workable modern 386 PC, much less fix it. I don't have the specialized tools. In modern audio systems, TV sets, electronics, computers, and peripherals such as printers, things happen *very* fast. An old Heathkit oscilloscope with 30 MHz capability and an analog VOM won't even see the binary pulses.

When office workers suddenly encountered those early word processing, accounting, and database programs, we had Trouble in River City right away. I'm sure most of us have been bothered by the klutz who can't handle anything more complicated in the way of machinery than a knife and fork. I discovered that the ultimate answer to these pests who can't read the documentation or follow verbal instructions is to tell them with a straight face, "OK, just type 'format!' "

My test for jellyware-friendly software is to install a program in my wife's 286 PC. Then I see how much help I have to give her before she's proficient enough with it to use it in her business. She's a professional in the medical transcription business, so she's no dummy. (After all, she married me, didn't she?) Teaching her CP/M was a pain. She never did get real friendly with some of the popular MS-DOS word processing programs out there on the market although she can work in MS-DOS very well. That says something for the progress that has been made. But we still have a long way to go.

Many modern hardware companies have been very responsive to human factors requirements in their designs (although we're apparently stuck with the non-ergonomic qwerty keyboard). And many software companies have been trying hard to make their products more "user-friendly." The Apple Computer people took the lead in this area. The software developers were improving their products for a while. However, over the past year or so, they've started to move in directions dictated by their marketing staffs.

At the moment, being first to market with a more powerful piece of software than the competition has higher priority

LICENSED TO UIZOEG
ELECTRONIC REPRODUCTION PROHIBITED

than producing software that's easy to use.

That's a pity. Software developers were just beginning to move into an important new area that goes beyond the physical interface between people and machines. They were on the verge of making important contributions in the unknown scientific area that involves the interface *between our minds and the software*.

They were on the edge of making important discoveries about how we think. They were beginning to learn something about the operating system of the jellyware. In this regard, they were far ahead of the academic psychologists because the software people had a problem to solve right away.

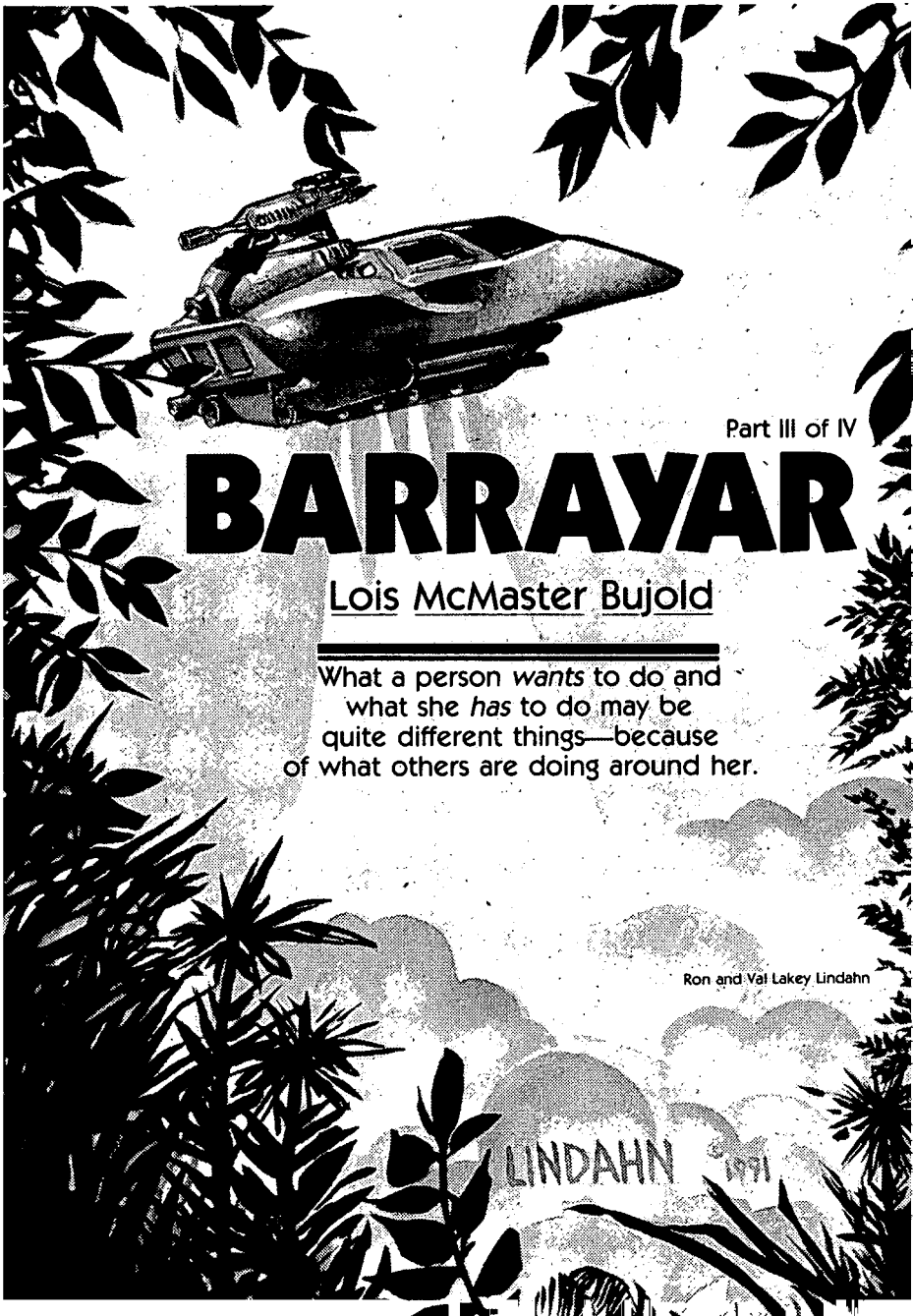
If you don't consider this to be important, you've never had to try to teach computer use to someone who, try as they may, simply cannot think in the logical and linear way that most software operates. Over the years, I learned how a computer works, how it "thinks" or processes information in the form of binary numbers. Sometimes I've had to figure out how it goes from Point A to Point Z in doing a job. I've had to figure out why, if I don't tell it specifically and exactly how to get to Point Z, the computer ends up at Point Omega instead. Most people can't think in the same way that a computer operates. This isn't because the computer is smarter than they are. It requires a different way of thinking to deal with a computer. Hardware/software has a different operating system than jellyware.

Thus, surprising as it may appear, the future of psychology and perhaps even neurology lies right now in the hands of the management of software companies. Certainly, the field of epistemology will benefit as well from what they learn in this process. Although this basic know-how may not appear to have immediate market value, software incorporating these principles will sell well. Eventually, the information will trickle into academia through graduate students who are familiar with this software progress. So I hold high hopes for the outcome. Once the market becomes saturated with "me-too" types of productivity programs, the next breakthroughs will not be put on the shelf by the powerful urge to be first to market with "me-too" software. The drivers will be a realization on the part of management that these breakthroughs produce a better product by better interfacing between the software and the jellyware. Then hardware and software will be as comfortable to use as the ergonomically molded handles of portable drills and other tools.

After all, that's what we're doing with hardware/software, isn't it? Aren't we creating better tools to help us think or to give us more time to use our minds instead of our hands?

If not, we're going in the wrong direction. And the universe will let us know soon enough in unambiguous ways. I don't believe that the human race is stupid enough to produce its own competition in an already competitive world! ■

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED



Part III of IV

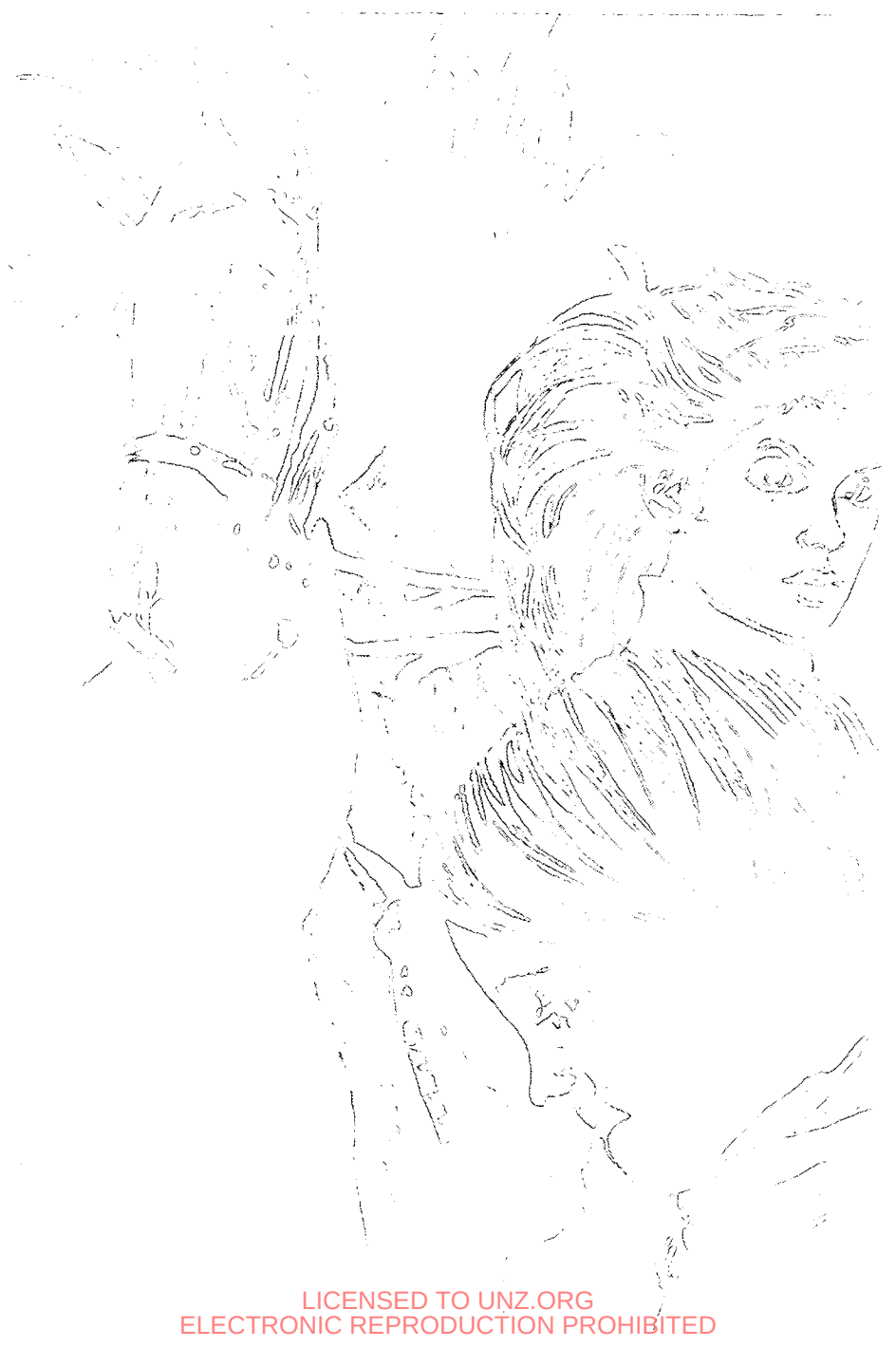
BARRAYAR

Lois McMaster Bujold

What a person *wants* to do and what she *has* to do may be quite different things—because of what others are doing around her.

Ron and Val Lakey Lindahn

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED



LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

SYNOPSIS

I am afraid, thinks **Cordelia.** *The new Lady Vorkosigan of the planet Barrayer, formerly Captain Cordelia Naismith of the Betan Astronomical Survey, has reason to be uneasy. She left her homeworld of Beta Colony, after its recent war with Barrayar, to marry* **Admiral Lord Aral Vorkosigan.** *Aral had resigned his commission, disgusted by the secret and lethal politics behind the war. But he has been hooked out of retirement by the dying* **Emperor Ezar** *and appointed Regent to the four-year-old heir* **Prince Gregor** *and his mother,* **Princess Kareen.** *Aral takes up his new duties, determined to serve honorably.*

Included in Aral's household are two former soldiers, **Lieutenant Koudelka,** *crippled by nerve disruptor fire and now serving as personal secretary to the new Lord Regent, and the strange* **Sergeant Bothari,** *victim of a draconian memory wipe for his crimes during the war, and of dubious mental balance.*

Aral and Cordelia visit Princess Kareen and Gregor. Kareen sends Cordelia a gift—her female bodyguard, the tall blonde **Droushnakovi,** *who is fascinated by Cordelia's history as a female soldier. Cordelia, newly pregnant and worried about Barrayar's primitive standards of medicine, welcomes her company. They go shopping and Cordelia buys a swordstick, which she presents to Koudelka; who is touchy about his handicaps: mutation-scarred Barrayar is brutal to the physically imperfect.*

Aral's father, the aged **General Count Piotr Vorkosigan,** *arrives from the country to attend the ceremonies heralding the new regency. Escorted to the visitor's gallery by Aral's cousin* **Captain Lord Padma Vorpatril,** *Cordelia watches the Joint Council Vote to confirm Aral's appointment. There she meets two young Vor lords,* **Evon** *and* **Carl Vorhalas;** *their acquaintance begins badly when Carl denigrates the crippled Koudelka, but they repair the breach.*

Ezar dies, and Gregor becomes Emperor. Cordelia meets Padma's wife **Alys Vorpatril,** *also pregnant, and tries to blend in to Barrayaran Vor society. Droushnakovi falls in love with Koudelka, but Kou, jealous of her physical abilities, so like those he has lost, and secretly worried about impotence from his injuries, rebuffs her.*

Aral survives an assassination attempt when a sonic grenade narrowly misses his groundcar. The assassin escapes unidentified. Cordelia's fear and sense of isolation grow.

At the emperor's birthday dinner at the Imperial Residence, a highly ceremonial function, Cordelia has a strange encounter with **Count Vidal Vordarian,** *who reveals what he clearly imagines is damaging information about Aral's sexual past. Since Cordelia knows it already, she is baffled by Vordarian's venom, till she realizes it is an oblique attack on Aral through her. Count Vordarian is also trying to court Princess Kareen. Disturbed, Cordelia privately asks Aral's personal security commander,* **Simon Illyan,** *to take a closer look at Vordarian.*

A dilemma then lands on Aral. Carl Vorhalas gets into a drunken fight at a party that turns into an illegal duel,and unfortunately kills his opponent. Duel-

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

ling had been ruthlessly stamped out in Aral's youth, and Carl's mandatory punishment is beheading. Carl's father, Aral's political crony **Count Vorhalas,** *asks Aral to commute the sentence. Aral, after agonized soul-searching, declines, and Carl is executed.*

That night, Carl's brother Evon fires a soltoxin gas grenade through Aral and Cordelia's bedroom window in an attempt at revenge. Thanks to Aral's quick reflexes they survive, but the poison and even more, its antidote, are violent teratogens, destroying the bones in their unborn child. At the hospital Cordelia encounters **Captain Vaagen,** *a military researcher, who has ideas for treatment—if the fetus can be transferred to a uterine replicator. This operation would be routine on Beta Colony, but is unknown on Barrayar. Despite opposition from both her physician and Count Piotr, who sees the damaged infant as an abhorred "mutation," Cordelia gets Aral's backing and the operation is attempted. Cordelia almost dies, but the fetus is successfully transferred into the artificial womb.*

Cordelia and Aral go to the country estate of Vorkosigan Surleau to recover. Drou then brings a personal problem to Cordelia; just before the soltoxin attack, Drou and Koudelka had made love, and she now fears she may be pregnant. A quick check with Cordelia's medical supplies reveals she's not, but this news does not cure her depression; Kou has been avoiding her. The reason emerges when Kou turns up, and accuses himself of rape. Finding himself functional for the first time in a year, he had panicked and taken her. Drou is incensed, realizing now that Kou was so intent upon himself that night he hardly saw her at all. Kou is embarrassed in turn by her demonstration that he would have been physically incapable of overpowering her, and fears that he was a victim of mere charity. They part, both furious.

Count Piotr returns from the capital, foiled in a secret attempt to have the fetus killed, and a far more serious argument begins between Piotr and Aral. Piotr denies the child his traditional name. Cordelia says to name him Miles, after her father, instead.

The agonizing clash is interrupted when a smoking lightflyer lands on the lawn, and the mortally wounded **ImpSec Chief Negri** *falls out. His passenger is the weeping and terrified five-year-old Emperor Gregor, wearing one shoe. Vidal Vordarian has attempted a coup in the capital, capturing Princess Kareen. His forces are now in murderous pursuit of Gregor.*

PART III

CHAPTER ELEVEN

"Sir," said Koudelka urgently to Vorkosigan, "the secured comconsole was sabotaged." The ImpSec guard commander at his elbow nodded confirmation. "I was just coming to tell you. . . ." Koudelka glanced fearfully at Negri's body, laid out on the grass. Two ImpSec men now knelt beside it frantically applying first aid: heart massage, oxygen, and hypospray injections. But the body remained flaccid under their pummeling, the face waxy and inert. Cordelia had seen death before, and recognized the symptoms. *No good, fellows, you won't call this one*

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

back. Not this time. He's gone to deliver that last message to Ezar in person. Negri's last report. . . .

"What time-frame on the sabotage?" demanded Vorkosigan. "Delayed or immediate?"

"It looked like immediate," reported the guard commander. "No sign of a timer or device. Somebody just broke open the back and smashed it up inside."

Everyone's eyes went to the ImpSec man who had been assigned the guard post outside the comconsole room. He stood, dressed like most of the others in black fatigues, disarmed between two of his fellows. They had followed their commander out when the uproar began on the front lawn. The prisoner's face was about the same lead-gray color as Negri's, but animated by flickering fear.

"And?" Vorkosigan said to the guard commander.

"He denies doing it," shrugged the commander. "Naturally."

Vorkosigan looked at the arrestee. "Who went in after me?"

The guard stared around wildly. He pointed abruptly at Droushnakovi, still holding the whimpering Gregor. "Her."

"I never!" said Drou indignantly. Her clutch tightened.

Vorkosigan's teeth closed. "Well, I don't need fast-penta to know that one of you is lying. No time now. Commander, arrest them both. We'll sort it out later." Vorkosigan's eyes anxiously scanned the northern horizon. "You," he pointed to another ImpSec man, "assemble every piece of transport you can find. We evacuate immediately. You," this to one of Piotr's armsmen, "go warn them in the village. Kou, grab the files, take a plasma arc and finish melting down that comconsole, and get back to me."

Koudelka, with one anguished look back over his shoulder at Droushnakovi, stumped off toward the house. Drou stood stiffly, stunned and angry and frightened, the cold wind fluttering her skirts. Her brows drew down at Vorkosigan. She scarcely noticed Koudelka's departure.

"You going to Hassadar first?" said Piotr to his son in a strange mild tone.

"Right."

Hassadar, the Vorkosigan's District capital: Imperial troops were quartered there. A loyal garrison?

"Not planning to hold it, I trust," said Piotr.

"Of course not. Hassadar," Vorkosigan's wolf-grin winked on and off, "shall be my first gift to Commodore Vordarian."

Piotr nodded, as if satisfied. Cordelia's head spun. Despite Negri's surprise, neither Piotr nor Aral seemed at all panicked. No wasted motion; no wasted words.

"You," said Aral to Piotr in an undertone, "take the boy." Piotr nodded. "Meet us—no. Don't tell even me where. You contact us."

"Right."

"Take Cordelia."

Piotr's mouth opened; it closed saying only, "Ah."

"And Sergeant Bothari. For Cordelia. Drou being—temporarily—off duty."

"I must have Esterhazy, then," said Piotr.

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

"I'll want the rest of your men," said Aral.

"Right." Piotr took his armsman Esterhazy aside, and spoke to him in low tones; Esterhazy departed upslope at a dead run. Men were scattering in every direction, as their orders proliferated down their command chain.

"Sergeant, you will obey Lady Vorkosigan's voice as my own," Aral told Bothari.

"Always, my lord."

"I want that lightflyer," Piotr nodded to Negri's damaged vehicle, which, while no longer smoking, did not look very airworthy to Cordelia. Not nearly ready for wild flight, jinking or diving to evade determined enemies. . . . *It's in about as good a shape for this as I am,* she feared. "And Negri," Piotr continued.

"He would appreciate that," said Aral.

"I am certain of it." Piotr nodded shortly, and turned to the first-aid squad. "Leave off, boys, it's no damn good by now." He directed them instead to load the body into the lightflyer.

Aral turned to Cordelia last, at last, for the first time. "Dear Captain . . ." The same sere expression had been fixed on his face since Negri'd fallen out of the lightflyer.

"Aral, was this a surprise to anyone but me?"

"I didn't want to worry you with it, when you were so sick." His lips thinned. "We'd found Vordarian was conspiring, at HQ and elsewhere. Illyan's investigation was inspired. Top security people must have that sort of intuition, I suppose. But to convict a man of Vordarian's magnitude and connections of treason, we needed the hardest of evidence. The Council of Counts as a body is highly intolerant of central Imperial interference with their members. We couldn't take a mere vaporplot before them.

"But Negri called me last night with the word he had his evidence in hand, enough to move on at last. He needed an Imperial order from me to arrest a ruling District Count. I was supposed to go up to Vorbarr Sultana tonight and oversee the operation. Clearly, Vordarian was warned. His original move wasn't planned for another month, preferably right after my successful assassination."

"But—"

"Go, now." He pushed her toward the lightflyer. "Vordarian's troops will be here in minutes. You *must* get away. No matter what else he holds, he can't make himself secure while Gregor stays free."

"Aral—" her voice came out a stupid squeak; she swallowed what felt like freeze-dried chunks of spit. She wanted to gabble a thousand questions, ten thousand protests. "Take care."

"You too." A last light flared in his eyes, but his face was already distant, lost to the driving internal rhythm of tactical calculation. No time.

Aral went to take Gregor from Drou's arms, whispering something to her; reluctantly, she released the boy to him. They piled into the lightflyer, Bothari at the controls, Cordelia jammed into the back beside Negri's corpse, Gregor dumped into her lap. The boy made no noise at all, but only shivered. His eyes were wide and shocky, turned up to

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

hers. Her arms encircled him automatically. He did not cling back, but wrapped his arms around his own torso. Negri, lolling, feared nothing now, and she almost envied him.

"Did you see what happened to your mother, Gregor?" Cordelia murmured to him.

"The soldiers took her." His voice was thin and flat.

The overloaded lightflyer hiccoughed into the air, and Bothari aimed it generally upslope, wavering only meters from the ground. It whined and moaned and rattled. Cordelia did too, internally. She twisted around to stare back through the distorted canopy for a look—a last look?—at Aral, who had turned away and was double-timing toward the driveway where his soldiers were assembling a motley collection of vehicles, personal and governmental. *Why aren't we taking one of those?*

"When you clear the second ridge—if you can—turn right, Sergeant," Piotr directed Bothari. "Follow the creek."

Branches slashed at the canopy, as Bothari flew less than a meter above the trickling water and sharp rocks.

"Land in that little space there and kill the power," ordered Piotr. "Everyone, strip off any powered items you may be carrying." He divested his chrono and a comm link. Cordelia shed her chrono.

Bothari, easing his flyer down beside the creek beneath some Earth-import trees that had only half-shed their leaves, asked, "Does that include weapons, m'lord?"

"Especially weapons, Sergeant. The charge unit on a stunner shows up on a scanner like a torch. A plasma arc power cell lights it up like a bloody bonfire."

Bothari fished two of each from his person, plus other useful gear; a hand-tractor, his comm link, his chrono, some kind of small medical diagnostic device. "My knife, too, m'lord?"

"Vibra-knife?"

"No, just steel."

"Keep that." Piotr hunched over the lightflyer's controls and began reprogramming the automatic pilot. "Everyone out. Sergeant, jam the canopy half-open."

Bothari managed this task with a pebble crammed forcibly into the canopy's seating-groove, then whirled at a sound from the undergrowth.

"It's me," came Armsman Esterhazy's breathless voice. Esterhazy, age forty, a mere stripling beside some of Piotr's other grizzled veterans, kept himself in top shape; he'd been hustling indeed, to get so puffed. "I have them, my lord."

The "them" in question turned out to be four of Piotr's horses, tied together by lines attached to the metal bars in their mouths the Barrayarans called "bits." Cordelia thought it a very small control surface for such a large piece of transport. The big beasts twitched and stamped and shook their jingling heads, red nostrils round and flaring, ominous bulky shapes in the vegetation.

Piotr finished reprogramming the autopilot. "Bothari, here," he said. Together, they manhandled Negri's corpse back to the pilot's seat and strapped it in. Bothari powered the lightflyer up and jumped out. It lurched into the air, nearly crashing into a tree, and lum-

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

bered back over the ridge. Piotr, standing, watching it rise, muttered under his breath, "Salute him for me, Negri."

"Where are you sending him?" Cordelia asked. *Valhalla?*

"Bottom of the lake," said Piotr, with some satisfaction. "*That* will puzzle them."

"Won't whoever follows trace it? Hoist it back out?"

"Eventually. But it should go down in the two-hundred-meter-deep section. It will take them time. And they won't know at first when it went down, nor how many bodies are missing from it. They'll have to search that whole section of the lake bottom, to be sure that Gregor isn't stuck in it. And negative evidence is never quite conclusive, eh? They won't *know* even then. Mount up, troops, we're on our way." He headed purposefully toward his animals.

Cordelia trailed doubtfully. Horses. Would one call them slaves, symbionts, or commensals? The one toward which Esterhazy aimed her stood five feet high at the top. He stuck its lines into her hands and turned away. Its saddle was at the level of her chin, and how was she supposed to levitate up there? The horses looked much larger, at this range, than when idling around decoratively at a distance in its pasture. The brown fur-covered skin of its shoulder shuddered suddenly. *Oh God, they've given me a defective one, it's going into convulsions*—a small mew escaped her.

Bothari had climbed atop his, somehow. He, at least, was not overpowered by the size of the animal. Given his height he made the full-sized beast look like a pony. City-bred, Bothari was no horseman, and seemed all knees and elbows despite what cavalry training Piotr had managed to inflict on him in the months of his service. But he was clearly in control of his mount, however awkward and rough his motions.

"You're point-man, Sergeant," Piotr told him. "I want us strung out to the limit of mutual visibility. No bunching up. Start up the trails for the flat rock—you know the place—and wait for us."

Bothari jerked his horse's head around and kicked at its sides, and clattered off up the woodland path at the seat-thumping pace called a *canter*.

Supposedly-creaky Piotr swung up into his saddle in one fluid motion; Esterhazy handed Gregor up to him, and Piotr held the boy in front of him. Gregor had actually seemed to cheer up at the sight of the horses, Cordelia could not imagine why. Piotr appeared to do nothing at all, but his horse arranged itself neatly, ready to start up the trail—*telepathy*, Cordelia decided wildly. *They've mutated into telepaths here and never told me* . . . or maybe it was the horse that was telepathic.

"Come on, woman, you're next," Piotr snapped impatiently.

Desperately, Cordelia stuck her foot through the whatchamacallit footholder, *stirrup*, grabbed, and heaved. The saddle slid slowly around the horse's belly, and Cordelia with it, till she was clinging underneath among a forest of horse legs. She fell to the ground with a thump, and scrambled out of the way. The horse twisted its neck around and peered at her, its dismay much milder than her own, then stuck its rubbery lips to the ground and began nibbling up weeds.

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

"Oh, God," Piotr groaned in exasperation.

Esterhazy had dismounted again, and hurried to her elbow to help her up. "Milady. Are you all right? Sorry, that was my fault, should have rechecked, uh—haven't you ever ridden before?"

"Never," Cordelia confessed. He hastily pulled off the saddle, straightened it back around, and fastened it more tightly. "Maybe I can walk. Or run." *Or slit my wrists. Aral, why did you send me off with these madmen?*

"It's not that hard, milady," Esterhazy promised her. "Your horse will follow the others. Rose is the gentlest mare in the stables. Doesn't she have a sweet face?"

Malevolent brown eyes with purple centers ignored Cordelia. "I can't." Her breath caught in a sob, the first of this ungodly day.

Piotr glanced at the sky, and back over his shoulder. "Useless Betan frill," he snarled at her. "Don't tell *me* you're never ridden astride." His teeth bared. "Just pretend it's my son."

"Here, give me your knee," said Esterhazy after an anxious look at the Count, cupping his hands.

Take the whole damned leg. She was shaking with anger and fear. She glared at Piotr, and grabbed again at the saddle. Somehow, Esterhazy managed to boost her aboard. She clung like grim death, deciding after one glance not to look down.

Esterhazy tossed her reins to Piotr, who caught them with an easy wrist-flick and took her horse in tow. The trail became a kaleidoscope of trees, rocks, sucking mud-puddles, whipping branches, all whirling and bumping past. Her belly began to ache, her new scar twinging. *If that bleeding starts again inside . . .* They went on, and on, and on.

They bumped down at last from a canter to a walk. She blinked, red-faced and wheezing and dizzy-sick. They had climbed, somehow, to a clearing overlooking the lake, having circled behind the broad shallow inlet that lay to the left of the Vorkosigan property. As her vision cleared, she could make out the little green patch in the general red-brown background that was the sloping lawn of the old stone house. Across the water lay the tiny village.

Bothari was there before them, waiting, hunkered down in the scrub out of sight, his blowing horse tied to a tree. He rose silently, and approached them, to stare worriedly at Cordelia. She half-fell, half-slid, off into his arms.

"You go too fast for her, m'lord. She's still sick."

Piotr snorted. "She'll be a lot sicker if Vordarian's squads overtake us."

"I'll manage," gasped Cordelia, bent over. "In a minute. Just. Give me. A minute." The breeze, chilling down at the autumn sun slanted toward evening, lapped her hot skin. The sky had greyed over to a solid shadowless milk-color. Gradually, she was able to straighten against the abdominal pain. Esterhazy arrived at the clearing, bringing up the rear at a less hectic pace.

Bothari nodded to the distant green patch. "There they are."

Piotr squinted; Cordelia stared. A couple of flyers were landing on the lawn. Not Aral's equipment. Men boiled out of them like black ants in their military fatigues, maybe one or

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

two bright flecks of maroon and gold among them, and a few spots of officer's dark green. *Great. Our friends and our enemies are all wearing the same uniforms. What do we do, shoot them all and let God sort them out?*

Piotr looked sour indeed. Were they smashing his home, down there, tearing the place apart looking for the refugees?

"Won't they be able to tell, when they count the horses missing from the stable, where we've gone and how?" asked Cordelia.

"I let them all out, milady," said Esterhazy. "At least they'll all have a chance, that way. I don't know how many we'll get back."

"Most of them will hang around, I'm afraid," said Piotr. "Hoping for their grain. I wish they had the sense to scatter. God knows what viciousness those vandals will come up with, if they're cheated of all their other prey."

A trio of flyers was landing around the perimeter of the little village. Armed men disembarked, and vanished among the houses.

"I hope Zai warned them all in time," muttered Esterhazy.

"Why would they bother those poor people?" asked Cordelia. "What do they want there?"

"Us, milady," said Esterhazy grimly. At her confused look he went on, "Us Armsmen. Our families. They're on a hostage-hunt down there."

Esterhazy had a wife and two children in the capital, Cordelia recalled. And what was happening to them right now? Had anyone passed them a warning? Esterhazy looked like he was wondering that, too.

"No doubt Vordarian will play the hostage game," said Piotr. "He's in for it now. He must win, or die."

Sergeant Bothari's narrow jaw worked, as he stared through the murky air. Had anyone remembered to warn Mistress Hysopi?

"They'll be starting their air-search shortly," said Piotr. "Time to get under cover. I'll go first. Sergeant, lead her."

He turned his horse and vanished into the undergrowth, following a path so faint Cordelia could not have recognized it as one. It took Bothari and Esterhazy together to lift her back aboard her transport. Piotr chose a walk for the pace, not for her sake, Cordelia suspected, but for his sweat-darkened animals. After that first hideous gallop, a walk was like a reprieve. At first.

They rode among trees and scrub, along a ravine, over a ridge, the horses' hooves scraping over stone. Her ears strained for the whine of flyers overhead. When one came, Bothari led her on a wild and head-spinning slide down into a ravine, where they dismounted and cowered under a rock ledge for minutes, until the whine faded. Getting back out of the ravine was even more difficult. They had to lead the horses up, Bothari practically seeming to hoist his along the precarious scrubby slope.

It grew darker, and colder, and windier. Two hours became three, four, five, and the smoky darkness turned pitchy. They bunched up with the horses nose to tail, trying not to lose Piotr. It began to rain, a sad black drizzle that made Cordelia's saddle even slipperier.

Around midnight they came to a clearing, hardly less black than the

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

shadows, and Piotr at last called a halt. Cordelia sat against a tree, stunned with exhaustion, nerve-strung, holding Gregor. Bothari split their only food, a ration bar he'd been carrying in his pocket, between Cordelia and Gregor. With Bothari's uniform jacket wrapped around him, Gregor finally overcame the chill enough to sleep. Cordelia's legs went pins and needles beneath him, but at least he was a lump of warmth.

Where was Aral, by now? For that matter, where were they? Cordelia hoped Piotr knew. They could not have made more than five kilometers an hour at most, with all that up and down and switch-back doubling. Did Piotr really imagine they were going to elude their pursuers this way?

Piotr, who had sat for a while under his own tree a few meters off, got up and went into the scrub to piss, then came back to peer at Gregor in the dimness. "Is he asleep?"

"Yes. Amazingly."

"Mm. Youth," Piotr grunted. Envy?

His tone was not so hostile as earlier, and Cordelia ventured, "Do you suppose Aral is in Hassadar by now?" She could not quite bring herself to say, *Do you suppose he ever made it to Hassadar?*

"He'll have been and gone by now."

"I thought he would raise its garrison."

"Raise and disperse, in a hundred different directions. And which squad has the Emperor? Vordarian won't know. But with luck, that traitor will be lured into occupying Hassadar."

"Luck?"

"A small but worthy diversion. Hassadar has no strategic value to speak of for either side. But Vordarian must divert a part of his—surely finite number of—loyal troops to hold it, deep in a hostile territory with a long guerrilla tradition. We'll get good intelligence of everything they do there, but the population will be opaque to them.

"And it's my capital. He occupies a count's District capital with Imperial troops—all my brother counts must pause and think about that one. *Am I next?* Aral probably went on to Tanery Base Shuttleport. He must open an independent line of communication with the space-based forces, if Vordarian has truly choked off Imperial Headquarters. The spacers' choice of loyalties will be critical. I predict a severe outbreak of technical difficulties in their comm rooms, while the ship commanders scramble to figure out which is going to be the winning side." Piotr emitted a macabre chuckle, in the shadows. "Vordarian is too young to remember Mad Emperor Yuri's War. Too bad for him. He's gained sufficient advantage, with his quick start, I'd loathe to grant him more."

"How fast . . . did it all happen?"

"Fast. There was no hint of any trouble when I was up to the capital at noon. It must have broken out right after I left."

A chill that had nothing to do with the rain fell between them briefly, as both remembered why Piotr had made that journey this day.

"Does the capital . . . have great strategic value?" Cordelia asked, changing the subject, unwilling to break open that raw issue again.

"In some wars it would. Not this one. This is not a war for territory. I

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

wonder if Vordarian realizes that? It's a war for loyalties, for the minds of men. No material object in it has more than a passing tactical importance. Vorbarr Sultana is a communications center, though, and communication is much. But not the only center. Collateral circulation will serve."

We have no communications at all, thought Cordelia dully. Out here in the woods in the rain. "But if Vordarian holds the Imperial Military Headquarters right now—"

"What he holds right now, unless I miss my guess, is a very large building full of chaos. I doubt a quarter of the men are at their posts, and half of them are plotting sabotage to benefit whatever side they secretly favor. The rest are out running for cover, or trying to get their families out of town."

"Will Captain Vorpatril be all—will Vordarian bother Lord and Lady Vorpatril, do you think?" Alys Vorpatril's pregnancy was very close to term. When she had visited Cordelia at Imp-Mil—only ten days ago?—her gliding walk had become a heavy flat-footed waddle, her belly a swaying high arc. Her doctor promised her a big boy. Ivan, he was to be named. His nursery was completely equipped and fully decorated, she had groaned, shifting her stomach uncomfortably in her lap, and *now* would be a good time. . . .

Now was not a good time any more.

"Padma Vorpatril will head the list. The hunt will be up for him, all right. He and Aral are the last descendants of Prince Xav, now, if anybody's fool enough to start up that damned succession-debate again. Or if anything does happen to Gregor." He bit down on this last line as if he might hold back fate with his teeth.

"Lady Vorpatril and the baby, too?"

"Perhaps not Alys Vorpatril. The boy, definitely."

Not exactly a separable matter, just at the moment.

The wind had died down at last. Cordelia could hear the horses' teeth tearing up plants, a steady *munch-munch-munch*.

"Won't the horses show up on thermal sensors? And us, too, despite dumping our power cells. I don't see how they can miss us for long." Were troops up there right now, eyes in the clouds?

"Oh, all the people and beasts in these hills will show up on their thermal sensors, once they start aiming them in the right direction."

"All? I hadn't seen any."

"We've passed about twenty little homesteads, so far tonight. All the people, and their cows, and their goats, and their red deer, and their horses, and their children. We're straws in a haystack. Still, it will be well for us to split up soon. If we can make it to the trail at the base of Amie Pass before midmorning, I have an idea or two."

By the time Bothari shoved her back atop Rose, the deep blackness was greying. Pre-dawn light seeped into the woods as they began to move again. Tree branches were charcoal strokes in the dripping mist. She clung to her saddle in silent misery, towed along by Bothari. Gregor actually still slept, for the first twenty minutes of the ride, open-mouthed and limp and pale in Piotr's grip.

It could be worse. I could still be

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

pregnant. At least if I die, I die singly now. Was little Miles safer than she right now? Anonymous in his replicator on some shelf in Vaagen and Henri's restricted laboratory? She could pray so, even if she couldn't believe so. *You Barrayaran bastards had better leave my boy alone.*

They zig-zagged up a long slope. The horses blew like bellows even though just walking, getting balky, stumbling over roots and rocks. They came to a halt at the bottom of a little hollow. Both horses and people drank from the murky stream. Esterhazy loosened girths again. He scratched under the horses' headbands, and they butted against him, nuzzling his empty pockets for tidbits. He murmured apologies and little encouragements to them. "It's all right, Rosie, you can rest at the end of the day. Just a few more hours." It was more briefing than anybody had bothered to give Cordelia.

Esterhazy left the horses to Bothari and accompanied Piotr into the woods, scrambling up the slope. Gregor busied himself in an attempt to gather vegetation and hand-feed it to the animals. They lipped at the native Barrayaran plants and let them fall messily from their mouths, unpalatable. Gregor kept picking the wads up and offering them again, trying to shove them in around the horses' bits.

"What's the Count up to, do you know?" Cordelia asked Bothari.

He shrugged. "Gone to make contact with somebody. *This* won't do." A jerk of his head in no particular direction indicated their night of beating around in the brush.

Cordelia could only agree. She lay back and listened for lightflyers, but heard only the babble of water in the little stream, echoed by the gurgles of her empty stomach. She was galvanized into motion once, to keep the hungry Gregor from sampling some of the possibly-toxic plants himself.

"But the horses ate *these* ones," he protested.

"No!" Cordelia shuddered, detailed visions of unfavorable biochemical and histamine reactions dancing in a molecular crack-the-whip through her head. "It's one of the first habits you have to learn for Betan Astronomical Survey, you know. Never put strange things in your mouth till they've been cleared by the lab. In fact, avoid touching your eyes, mouth, and mucous membranes."

Gregor, unconsciously compelled, promptly rubbed his nose and eyes. Cordelia sighed, and sat back down. She sucked on her tongue, thinking about that stream water and hoping Gregor wouldn't point out her inconsistency. Gregor threw pebbles into the pools.

Fully an hour later, Esterhazy returned. "Come on." They merely led the horses this time, sure sign of a steep climb to come. Cordelia scrambled, and scraped her hands. The horses' haunches heaved. Over the crest, down, up again, and they came out on a muddy double trail carved through the forest.

"Where are we?" asked Cordelia.

"Aime Pass Road, milady," supplied Esterhazy.

"This is a road?" Cordelia muttered in dismay, staring up and down it. Piotr stood a little way off, with another old man holding the reins of a sturdy little black-and-white horse.

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

The horse was considerably better groomed than the old man. Its white coat was bright and its black coat, shiny. Its mane and tail were brushed to feather-softness. Its feet and fetlocks were wet and dark, though, and its belly flecked with fresh mud. In addition to an old cavalry saddle like Piotr's horse's, the pinto bore four large saddlebags, a pair in front and a pair behind, and a bedroll.

The old man, as unshaven as Piotr, wore an Imperial Postal Service jacket so weatherworn its blue had turned grey. This was supplemented by odd bits of other old uniforms: a black fatigue shirt, an ancient pair of trousers from a set of dress greens, worn but well-oiled officer's knee-high riding boots on his bent bowlegs. He also wore a non-regulation felt hat with a few dried flowers stuck in its faded print headband. He smacked his black-stained lips and stared at Cordelia. He was missing several teeth; the rest were long and yellow-brown.

The old man's gaze fell on Gregor, holding Cordelia's hand. "So that's him, eh? Huh. Not much." He spat reflectively into the weeds by the side of the path.

"Might do in time," asserted Piotr. "If he gets time."

"I'll see what I can do, Gen'ral."

Piotr grinned, as if at some private joke. "You have any rations on you?"

" 'Course." The old man smirked, and turned to rummage in one of his saddlebags. He came up with a package of raisins in a discarded plastic flimsy, some little cakes of brownish crystals wrapped in leaves, and what looked like a handful of strips of leather, again in a twist made of a used plastic flimsy. Cordelia caught a heading, Update of Postal Regulations C6.77a, modified 6/17. File Immediately In Permanent Files.

Piotr looked the stores over judiciously. "Dried goat?" he nodded toward the leathery mess.

"Mostly," said the old man.

"We'll take half. And the raisins. Save the maple sugar for the children." Piotr popped one cube in his mouth, though. "I'll find you in maybe three days, maybe a week. You remember the drill from Yuri's War, eh?"

"Oh, yes," drawled the old man.

"Sergeant." Piotr waved Bothari to him. "You go with the Major, here. Take her, and the boy. He'll take you to ground. Lie low till I come get you."

"Yes, m'lord," Bothari intoned flatly. Only his flickering eyes betrayed his uneasiness.

Piotr was moving a lot more slowly. He waited for Esterhazy to give him a leg up on his horse. He settled into his saddle with a sigh, his back temporarily curved in an uncharacteristic slump. "Damn, but I'm getting old for this sort of thing."

Thoughtfully, the man Piotr had called the Major reached into a side pocket and pulled out a leather pouch. "Want my gum-leaf, Gen'ral? A better chew than goat, if not as long-lasting."

Piotr brightened. "Ah. I would be most grateful. But not your whole pouch, man." Piotr dug among the pressed dried leaves that filled the container, and crumbled himself off a generous half, which he stuffed in his breast pocket. He put a wad in his cheek, and returned the pouch with a sincere salute.

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

Gum-leaf was a mild stimulant; Cordelia had never seen Piotr chew it in Vorbarr Sultana.

"Take care of m'lord's horses," called Esterhazy rather desperately to Bothari. "They're not machines, remember."

Bothari grunted something noncommital, as the Count and Esterhazy headed their animals back down the trail. They were out of sight in a few moments. A profound quiet descended.

CHAPTER TWELVE

The Major put Gregor, comfortably padded by the bedroll and saddlebags, up behind him. Cordelia faced one more climb onto that torture-device for humans and horses called a saddle. She would never have made it without Bothari. The Major took her reins this time, and Rose and his horse walked side by side with a lot less jerking of the bridle. Bothari dropped back, trailing watchfully.

"So," said the old man after a time, with a sideways look at her, "You're the new Lady Vorkosigan."

Cordelia, rumpled and filthy, smiled back desperately. "Yes. Ah, Count Piotr didn't mention your name, Major . . . ?"

"Amor Klyeuvi, milady. But folks up here just call me Kly."

"And, uh . . . what are you?" Besides some mountain kobold Piotr had conjured out of the ground.

He smiled, an expression more repellant than attractive given the state of his teeth. "I'm the Imperial Mail, milady. I ride the circuit through these hills, out of Vorkosigan Surleau, every ten days. Been at it for eighteen years. There are grown kids up here with kids of their own who never knew me as anything but Kly the Mail."

"I thought mail went to these parts by lightflyer."

"They're phasing them in. But the flyers don't go to every house, just to these central drop-points. No courtesy to it, any more." He spat disgust and gum-leaf. "But if the General'll hold 'em off another two years here, I'll make my last twenty, and be a triple-twenty-years Service man. I retired with my double-twenty, see."

"From what branch, Major Klyeuvi?"

"Imperial Rangers." He watched slyly for her reaction; she rewarded him with impressed raised brows. "I was a throat-cutter, not a tech. 'S why I could never go higher than major. Got my start at age fourteen, in these mountains, running rings around the Cetagandans with the General and Ezar. Never did get back to school after that. Just training courses. The Service passed me by, in time."

"Not entirely, it seems," said Cordelia, staring around the apparently-unpeopled wilderness.

"No . . . " his breath became a purse-lipped sigh, as he glanced back over his shoulder at Gregor in meditative unease.

"Did Piotr tell you what happened yesterday afternoon?"

"Yo. I left the lake day before yesterday morning. Missed all the excitement. I expect the news will catch up with me before noon."

"Is . . . anything else likely to catch up with us by then?"

"We'll just have to see." He added

LICENSED TO INDIGO
ELECTRONIC REPRODUCTION PROHIBITED

more hesitantly, "You'll have to get out of those clothes, milady. The name VORKOSIGAN, A., in big block letters over your jacket pocket isn't any too anonymous."

Cordelia glanced down at Aral's black fatigue shirt, quelled.

"My lord's livery sticks out like a flag, too," Kly added, looking back at Bothari. "But you'll pass well enough, in the right clothes. I'll see what I can do, in a bit here."

Cordelia sagged, her belly aching in anticipation of rest. Refuge. But at what price to those who gave her refuge? "Will helping us put you in danger?"

His tufted grey brow rose. "Belike." His tone did not invite further comment on the topic.

She had to bring her tired mind back on-line somehow, if she was to be an asset and not a hazard to everyone around her. "That gum-leaf of yours. Does it work anything like coffee?"

"Oh, better than coffee, milady."

"Can I try some?" Shyness lowered her voice; it might be too intimate a request.

His cheeks creased in a dry grin. "Only backcountry sticks like me chew gum-leaf, milady.' Pretty Vor ladies from the capital wouldn't be caught dead with it in their pearly teeth."

"I'm not pretty, I'm not a lady, and I'm not from the capital. And I'd kill for coffee right now. I'll try it."

He let his reins drop to his steadily-plodding horse's neck, rummaged in his blue-grey jacket pocket, and pulled out his pouch. He broke off a chunk, in none-too-clean fingers, and leaned across.

She regarded it a doubtful moment, dark and leafy in her palm. *Never put strange organics in your mouth till they've been cleared by the lab.* She lapped it up. The wad was made self-sticking by a bit of maple syrup, but after her saliva washed away the first startling sweetness, the flavor was pleasantly bitter and astringent. It seemed to peel away the night's film coating her teeth, a real improvement. She straightened.

Kly regarded her with bemusement. "So what are you, off-worlder not-a-lady?"

"I was an astrocartographer. Then a Survey captain. Then a soldier, then a POW, then a refugee. And then I was a wife, and then I was a mother. I don't know what I'm going to be next," she answered honestly, around the gum-leaf. Pray not *widow*.

"Mother? I'd heard you were pregnant, but . . . didn't you lose your baby to the soltoxin?" He eyed her waist in confusion.

"Not yet. He still has a fighting chance. Though it seems a little uneven, to match him against all of Barrayar just yet. . . . He was born prematurely. By surgical section." (She decided not to try to explain the uterine replicator.) "He's at the Imperial Military Hospital. In Vorbarr Sultana. Which for all I know has just been captured by Vordarian's rebel forces . . . " She shivered. Vaagen's lab was classified, nothing to draw anyone's attention. Miles was all right, all right, all right, and one crack in that thin shell of conviction would hatch out hysteria. . . . Aral, now, Aral could take care of himself if anyone could. So how had he been so caught-out, eh, eh? No question, Imp-

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

Sec was riddled with treason. They couldn't trust anyone around here, and where was Illyan? Trapped in Vorbarr Sultana? Or was he Vordarian's quisling? No . . . cut off, more likely. Like Kareen. Like Padma and Alys Vorpatril. Life racing death . . .

"No one will bother the hospital," said Kly, watching her face.

"I—yes. Right."

"Why did you come to Barrayar, offworlder?"

"I wanted to have children." A humorless laugh puffed from her lips. "Do you have any children, Kly the Mail?"

"Not so far as I know."

"You were very wise."

"Oh . . . " His face grew distant. "I don't know. Since my old woman died, 's been pretty quiet. Some men I know, their children have been a great trouble to them. Ezar. Piotr. Don't know who will burn the offerings on my grave. M'niece, maybe."

Cordelia glanced at Gregor, riding along atop the saddlebags and listening. Gregor had lit the taper to Ezar's great funeral offering-pyre, his hand guided by Aral's.

They rode on up the road, climbing. Four times Kly ducked up side-trails, while Cordelia, Bothari, and Gregor waited out of sight. On the third of these delivery-runs Kly returned with a bundle including an old skirt, a pair of worn trousers, and some grain for the tired horses. Cordelia, still chilled, put on the skirt over her old Survey trousers. Bothari exchanged his conspicuous brown uniform pants with the silver stripe down the side for the hillman's castoffs. The pants were too short, riding ankle-high, giving him the look of a sinister scarecrow. Bothari's uniform and Cordelia's black fatigue shirt were bundled out of sight in an empty mailbag. Kly solved the problem of Gregor's missing shoe by simply stripping off the remaining one and letting the boy go barefoot, and concealing his toonice blue suit beneath a man's oversize shirt with the sleeves rolled up. Man, woman, child, they looked a haggard, ragged little hill family.

They made the top of Amie Pass and started back down. Occasional folk waited by the roadside for Kly; he passed on verbal messages, rattling them off in what sounded to Cordelia to be verbatim style. He distributed letters on papers, and cheap vocodisks, their self-playbacks tinny and thin. Twice he paused to read letters to apparently illiterate recipients, and once to a blind man guided by a small girl. Cordelia grew twitchier with each mild encounter, drained by nervous exhaustion. *Will that fellow betray us? What do we look like to that woman? At least the blind man can't describe us. . . .*

Toward dusk, Kly returned from one of his side-loops to gaze up and down the silent shadowed wilderness trail and declare, "This place is just too crowded." It was a measure of Cordelia's overstrain that she found herself mentally agreeing with him.

He looked her over, worry in his eyes. "Think you can go on for another four hours, milady?"

What's the alternative? Sit by this mud-puddle and weep till we're captured? She struggled to her feet, pushing up from the log she'd been perched on waiting their guide's return. "That

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

depends on what's at the end of four more hours of this."

"My place. I usually spend this night at my niece's, near here. My route ends about another ten hours farther on, when I'm making my deliveries, but if we go straight up we can do it in four. I can double back to this point by tomorrow morning and keep my schedule as usual. Real quietlike. Nothing to remark on."

What does "straight up" mean? But Kly was clearly right; their whole safety lay in their anonymity, their invisibility. The sooner they were out of sight, the better. "Lead on, Major."

It took six hours. Bothari's horse went lame, short of their goal. He dismounted and towed it. It limped and tossed its head. Cordelia walked too, to ease her raw legs and to keep herself warm and awake in the chilling darkness. Gregor fell asleep and fell off, cried for his mother, then fell asleep again when Kly moved him around to his front to keep a better grip. The last climb stole Cordelia's breath and made her heart race, even though she hung onto Rose's stirrup for help. Both horses moved like old women with arthritis, stumping along jerkily; only the animals' innate gregariousness kept them following Kly's hardy pinto.

The climb became a drop, suddenly, over a ridge and into a great vale. The woods grew thin and ragged, interspersed with mountain meadows. Cordelia could feel the spaces stretching out around her, true mountain scale at last, vast gulfs of shadow, huge bulks of stone, silent as eternity. Three snowflakes melted on her staring, upturned face. At the edge of a vague patch of trees, Kly halted. "End of the line, folks."

Cordelia sleepwalked Gregor into the tiny shack, felt her way to a cot, and rolled him onto it. He whimpered in his sleep as she dragged the blankets over him. She stood swaying, numb-brained, then in a last burst of lucidity kicked off her slippers and climbed in with him. His feet were cold as a cryo-corpse's. As she warmed them against her body his shivering gradually relaxed into deeper sleep. Dimly, she was aware that Kly—Bothari—somebody, had started a fire in the fireplace. Poor Bothari, he'd been awake every bit as long as she had. In a quite military sense, he was her man; she should see that he ate, cared for his feet, slept . . . she should, she should. . . .

Cordelia snapped awake, to discover that the movement that had roused her was Gregor, sitting up beside her and rubbing his eyes in bleary disorientation. Light streamed in through two dirty windows on either side of the wooden front door. The shack, or cabin—two of the walls seemed made of whole logs stacked up—was only a single room. In the grey stone fireplace at one end a kettle and a covered pot sat on a grating over a bed of glowing coals. Cordelia reminded herself again that wood represented poverty, not wealth, here. They must have passed ten million trees yesterday.

She sat up, and gasped in pain from lactic acid build-up in her muscles. She straightened her legs. The bed was a rope net strung on a frame and supporting first a straw-stuffed mattress, then a feather-stuffed one. She and Gregor

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

were warm, at least, in their nest. The air of the room was dusty-smelling, tinged with a pleasant edge of wood smoke.

Booted footsteps sounded on the boards of the porch outside, and Cordelia grasped Gregor's arm in sudden panic. She couldn't run—that black iron fireplace poker would make a pretty poor weapon against a stunner or nerve disruptor—but the steps were Bothari's. He slipped through the door along with a puff of outside air. His crudely-sewn tan cloth jacket must be a borrowing from Kly, judging from the way his bony wrists stuck out beyond the turned-down sleeve cuffs. He'd pass for a hillman easily, as long as he kept his urban-accented mouth shut.

He nodded at them. "Milady. Sire." He knelt by the fireplace, glanced under the pot lid, tested the kettle's temperature by cupping a big hand a few centimeters above it. "There's groats, and syrup," he said. "Hot water. Herb tea. Dried fruit. No butter."

"What's happening?" Cordelia rubbed her face awake, and swung her legs overboard, planning a stumble toward that herb tea.

"Not much. The Major rested his horse a while, and left before light, to keep his schedule. It's been real quiet, since."

"Did you get any sleep yet?"

"Couple of hours, I think."

The tea had to wait while Cordelia escorted the Emperor downslope to Kly's outhouse. Gregor wrinkled his nose, and eyed the adult-sized seat nervously. Back on the cabin porch Cordelia supervised hand and face washing over a dented metal basin.

The view from the porch, once she'd toweled her face dry and vision clear, was stunning. Half of Vorkosigan's District seemed spread out below, the brown foothills, the green- and yellow-specked peopled plains beyond. "Is that our lake?" Cordelia nodded to a glint of silver in the hills, near the limits of her vision.

"I think so," said Bothari, squinting.

So far, to have come this fast on foot. So fearfully near, in a lightflyer . . . well, at least you could see whatever was coming.

The hot groats and syrup, served on a cracked white plate, tasted wonderful. Cordelia guzzled herb tea, and realized she'd become dangerously dehydrated. She tried to encourage Gregor to drink, but he didn't like the astringent taste of the tea. Bothari looked almost suffused with shame, that he couldn't produce milk out of the air at his Emperor's direct request. Cordelia solved the dilemma by sweetening the tea with syrup, rendering it acceptable.

By the time they finished breakfast, washed up the few utensils and dishes, and flung the bit of wash water over the porch rail, the porch had warmed enough in the morning sun to make sitting tolerable.

"Why don't you take over the bed, Sergeant. I'll keep watch. Ah . . . did Kly have any suggestions what we should do, if somebody hostile drops down on us here before he gets back? It kind of looks like we've run out of places to run to."

"Not quite, milady. There's a set of caves, up in that patch of woods in back. An old guerrilla cache. Kly took me back last night to see the entrance."

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

Cordelia sighed. "Right. Get some sleep, Sergeant, we'll surely need you later."

She sat in the sun in one of the wooden chairs, resting her body if not her mind. Her eyes and ears strained for the whine of a distant lightflyer or heavy aircar. She tied Gregor's feet up with makeshift rag shoes, and he wandered about examining things. She accompanied him on a visit to the shed to see the horses. The sergeant's beast was still very lame, and Rose was moving as little as possible, but they had fodder in a rick and water from a little stream that ran across the end of their enclosure. Kly's other horse, a lean and fit-looking sorrel, seemed to tolerate the equine invasion, only nipping when Rose edged too close to its side of the hayrick.

Cordelia and Gregor sat on the porch steps as the sun passed zenith, comfortably warm now. The only sound in the vast vale beside a breeze in the branches was Bothari's snores, resonating through the cabin walls. Deciding this was as relaxed as they were likely to get, Cordelia at last dared quiz Gregor on his view—her only eyewitness report—of the coup in the capital. It wasn't much help; Gregor's five-year-old eyes saw the *what* well enough, it was the *whys* that escaped him. On a higher level, she had the same problem, Cordelia admitted ruefully to herself.

"The soldiers came. The colonel told Mama and me to come with him. One of our liveried men came in. The colonel shot him."

"Stunner, or nerve disruptor?"

"Nerve disruptor. Blue fire. He fell down. They took us to the Marble Courtyard. They had aircars. Then Captain Negri ran in, with some men. A soldier grabbed me, and Mama grabbed me back, and that's what happened to my shoe. It came off in her hand. I should have . . . fastened it tighter, in the morning. Then Captain Negri shot the soldier who was carrying me, and some soldiers shot Captain Negri—"

"Plasma arc? Is that when he got that horrible burn?" Cordelia asked. She tried to keep her tone very calm.

Gregor nodded mutely. "Some soldiers took Mama, those other ones, not Negri's ones. Captain Negri picked me up and ran. We went through the tunnels, under the Residence, and came out in a garage. We went in the lightflyer. They shot at us. Captain Negri kept telling me to shut up, to be quiet. We flew and flew, and he kept yelling at me to be quiet, but *I was*. And then we landed by the lake." Gregor was trembling again.

"Mm." Kareen spun in vivid detail in Cordelia's head, despite the simplicity of Gregor's account. That serene face, wrenched into screaming rage and terror as they tore the son she'd borne the Barrayaran hard way from her grip, leaving . . . nothing but a shoe, of all their precarious life and illusory possessions. So Vordarian's troops had Kareen. As hostage? Victim? Alive or dead?

"Do you think Mama's all right?"

"Sure." Cordelia shifted uncomfortably. "She's a very valuable lady. They won't hurt her." *Till it becomes expedient for them to do so.*.

"She was crying."

"Yes." She could feel that same knot in her own belly. The mental flash she'd

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

shied from all day yesterday burst in her brain. Boots, kicking open a secured laboratory door. Kicking over desks, tables. No faces, just boots. Gun butts sweeping delicate glassware and computerized monitors from benches into a tangled smash on the floor. A uterine replicator rudely jerked open, its sterile seals slashed, its contents dumped pell-mell wetly on the tiles . . . no need even for the traditional murderous swing by the heels, of an infant head against the nearest concrete wall. Miles was so little the boots could just *step* on him and smash him to jam. . . . She drew in her breath.

Miles is all right. Anonymous, just like us. We are very small, and very quiet, and safe. Shut up, keep quiet, kid. She hugged Gregor tightly. "My little boy is in the capital too, same as your Mama. And you're with me. We'll look out for each other. You bet."

After supper, and still no sign of Kly, Cordelia said, "Show me that cave, Sergeant."

Kly kept a box of cold lights atop his mantel. Bothari cracked one, and led Cordelia and Gregor up into the woods on a faint stony path. He made a menacing will-o'-the-wisp, with the bright green-tinged light shining from the tube between his fingers.

The area near the cave mouth showed signs of having once been cleared, though recent overgrowth was closing back in. The entrance was by no means hidden, a yawning black hole twice the height of Bothari and wide enough to edge a lightflyer through. Immediately within, the roof rose and walls flared to create a dusty cavern. Whole patrols could camp herein, and had, in the distant past, judging from the antique litter. Bunk niches were carved in the rock, and names and initials and dates and crude comments covered the walls.

A cold fire-pit in the center was matched by a blackened vent-hole above, which had once provided exit for the smoke. A ghostly crowd of hillmen, guerrilla soldiers, seemed to hover in Cordelia's mind's eye, eating, joking, spitting gum-leaf, cleaning their weapons and planning their next foray. Ranger spies came and went, ghosts among the ghosts, to place their precious blood-won information before their young general, who spread his maps out on that flat rock over there. . . . She shook the vision from her head, and took the light and explored the niches. At least five traversable exits led off from the cavern, three of which showed signs of having been heavily traveled.

"Did Kly say where these went, where they came out, Sergeant?"

"Not exactly, milady. He did say the passages went back for kilometers, into the hills. He was late, and in a hurry to get on."

"Is it a vertical or horizontal system, did he say?"

"Beg pardon, milady?"

"All on one stratum, or with unexpected big drops? Are there lots of blind alleys? Which path were we supposed to take? Are there underground streams?"

"I think he expected to be leading us, if we went in. He started to explain, then said it was too complicated."

She frowned, contemplating the possibilities. She'd done a bit of cave work in her Survey training, enough to grasp

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

what the term *respect for the hazards* meant. Vents, drops, cracks, labyrinthine cross-passages . . . plus, here, the unexpected rise and fall of water, not a matter of much concern on Beta Colony. It had rained last night. Sensors were not much help in finding a lost cave explorer. And whose sensors? If the system was as extensive as Kly suggested, it could absorb hundreds of searchers . . . her frown changed to a slow smile.

"Sergeant, let's camp here tonight."

Gregor liked the cave, especially when Cordelia described the history of the place. He rattled around the cavern whispering military dialogue to himself like "Zap, zap, zap!" climbed in and out of all the niches, and tried to sound out the rude words carved in the walls. Bothari lit a small fire in the pit and spread a bedroll for Gregor and Cordelia, taking the night watch for himself. Cordelia set a second bedroll, wrapped around trail snacks and supplies, in a grabable bundle near the entrance. She arranged the black fatigue jacket with the name VORKOSIGAN, A., artistically in a niche, as if used to sit upon and keep someone's haunches from the cold stones and then temporarily forgotten when the sitter rose. Last of all Bothari brought up their lame and useless horses, resaddled and bridled, and tethered them just outside.

Cordelia emerged from the widest passage, where she'd dropped an almost-spent cold light a quarter kilometer along, over a rope-strung ten-meter cliff. The rope was natural fiber, and very old and brittle. She'd decided not to test it.

"I don't quite get it, milady," said Bothari. "With the horses abandoned out there, if anyone comes looking they'll find us at once, and know exactly where we've gone."

"Find this, yes," said Cordelia. "Know where we've gone, no. Because without Kly, there is no way I'm taking Gregor down into this labyrinth. But the best way to make it look like we were here is to actually be here for a bit."

Bothari's flat eyes lit in understanding at last, as he gazed around at the five black entrances at their various levels. "Ah!"

"That means we also need to find a real bolt-hole. Somewhere up in the woods, where we can cut across to the trail Kly brought us up yesterday. Wish we'd done this in daylight."

"I see what you mean, milady. I'll scout."

"Please do, Sergeant."

Taking their trail bundle, he disappeared into the dim woods. Cordelia tucked Gregor into the bedroll, then perched outside among the rocks above the cave mouth and kept watch. She could see the vale, stretched out greyly below the tops of the trees, and make out Kly's cabin roof. No smoke rose now from its chimney. Beneath the stone, no remote thermal sensor would find their new fire, though the smell of it hung in the chill air, detectable to nearby noses. She watched for moving lights in the sky till the stars were a watery blur in her eyes.

Bothari returned after a very long time. "I have a spot. Shall we move now?"

"Not yet. Kly might still show up." *First.*

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

"Your turn to sleep, then, milady."

"Oh, yes." The evening's exertion had only partly warmed the acid fatigue from her muscles. Leaving Bothari on the limestone outcrop in the starlight like a guardian gargoyle, she crawled in with Gregor. Eventually, she slept.

She woke with the grey light of dawn making the cavern entrance a luminous misty oval. Bothari made hot tea, and they shared cold lumps of pan bread left from last night, and nibbled dried fruit.

"I'll watch some more," Bothari volunteered. "I can't sleep so good without my medication anyway."

"Medication?" said Cordelia.

"Yeah, I left my pills at Vorkosigan Surleau. I can feel it clearing out of my system. Things seem sharper."

Cordelia chased a suddenly very lumpy bite of bread with a swallow of hot tea. But were his psychoactive drugs truly therapeutic, or merely political in their effect? "Let me know if you are experiencing any kind of difficulty, Sergeant," she said cautiously.

"Not so far. Except it's getting harder to sleep. They suppress dreams." He took his tea and wandered back to his post.

Cordelia carefully refrained from cleaning up their campsite. She did escort Gregor to the nearest rivulet for a personal wash-up. They were certainly acquiring an authentic hill-folk aroma. They returned to the cavern, where Cordelia rested a while on the bedroll. She must insist on relieving Bothari soon. Come on, Kly . . .

Bothari's tense low voice reverberated in the cavern. "Milady. Sire. Time to go."

"Kly?"

"No."

Cordelia rolled to her feet, kicked the prearranged pile of dirt over the last coals of their fire, grabbed Gregor, and hustled him out the cave mouth. He looked suddenly frightened and sickly. Bothari pulled the bridles off the horses, loosing them and tossing the gear on the pile with the saddles. Cordelia pulled herself up beside the cave and snatched one quick glimpse over the treetops. A flyer had landed in front of Kly's cabin. Two black-uniformed soldiers were circling to the right and left. A third disappeared under the porch roof: Faint and delayed in the distance came the bang of Kly's front door being kicked open. Only soldiers, no hillman-guides or hillman-prisoners in that flyer. No sign of Kly.

They took to the woods at a jog, Bothari boosting up and carrying Gregor piggy-back. Rose made to follow them, and Cordelia whirled to wave her arms and whisper frantically. "No! Go away, idiot beast!" to spook her off. Rose hesitated, then turned to stay by her lame companion.

Their run was steady, unpanicked. Bothari had his route all picked out, taking advantage of sheltering rocks and trees and water-carved steps. They scrambled up, down, up, but just when she thought her lungs would burst and their pursuers must spot them, Bothari vanished along a steep rock face.

"Over here, milady!"

He'd found a thin, horizontal crack in the rocks, half a meter high and three meters deep. She rolled in beside him to find the niche shielded by solid rock everywhere but the front, and that al-

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

most blocked by fallen stone. Their bedroll and supplies waited.

"No wonder," Cordelia gasped, "the Cetagandans had trouble up here." A thermal sensor would have to be aimed straight in, to pick them up, from a point twenty meters in the air out over the ravine. The place was riddled with hundreds of similar crannies.

"Even better." Bothari pulled a pair of antique field glasses, looted from Kly's cabin, from their bedroll. "We can see them."

The glasses were nothing but binocular tubes with sliding glass lenses, purely passive light-collectors. They must have dated from the Time of Isolation. The magnification was poor by modern standards, no UV or infra-red boost, no range finder pulse . . . no power cell to leak detectable energy traces. Flat on her belly, chin in the rubble, Cordelia could glimpse the distant cavern entrance on the slope rising beyond the ravine and a knife-backed ridge. When she said, "Now we must be *very* quiet," pale Gregor practically went fetal.

The black-clad scanner men found the horses at last, though it seemed to take them forever. Then they found the cave mouth. The tiny figures gesticulated excitedly to each other, ran in and out, and called the flyer, which landed outside the entrance with much crackling of shrubbery. Four men entered; eventually, one came back out. In time, another flyer landed. Then a lift van arrived, and disgorged a whole patrol. The mountain mouth ate them all. Another lift van came, and men set up lights, a field generator, comm links.

Cordelia made a nest of the bedroll for Gregor, and fed him little snacks and sips from their water bottle. Bothari stretched out in the back of the niche with the thinnest blanket folded under his head, otherwise seeming impervious to the stone. While Bothari dozed, Cordelia kept careful count of the net flow of hunters. By mid-afternoon, she calculated that some forty men had gone below and not come up again.

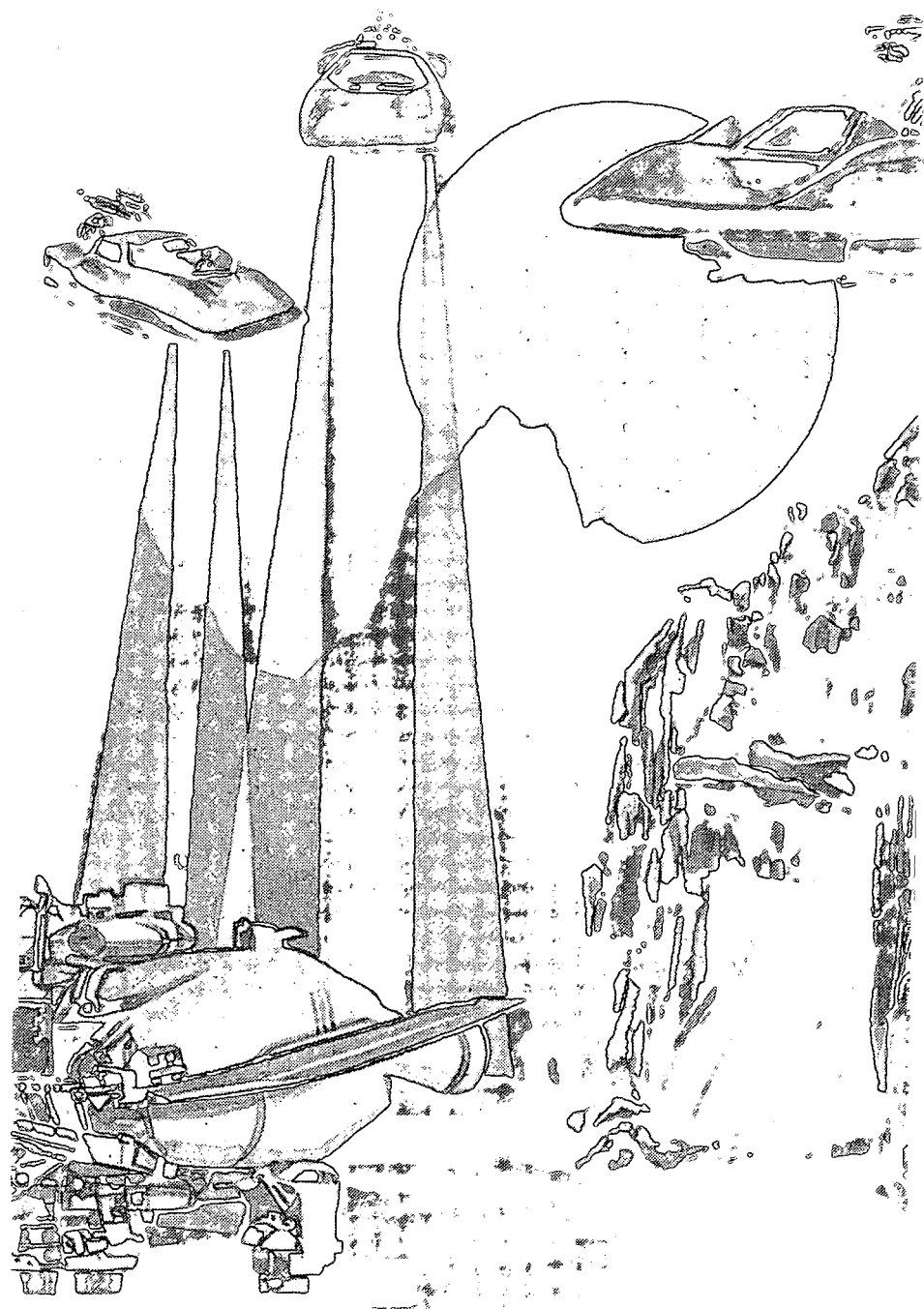
Two men were brought out strapped to float pallets, loaded into a medical-evacuation lifter, and flown away. A lightflyer made a bad landing in the crowded area, toppled downslope, and crunched into a tree. Yet more men became involved in extracting, righting, and repairing it. By dusk over sixty men had been sucked down the drain. A whole company drawn away from the capital, not pursuing refugees, not available to root out the secrets of Imp-Mil. . . . It wasn't enough to make a real difference, surely.

It's a start.

Cordelia and Bothari and Gregor slipped from the niche in the gloaming, cleared the ravines, and made their way silently through the woods. It was nearly full dark when they came to the edge of the trees and struck Kly's trail. As they crossed over the ridge edging the vale, Cordelia looked back. The area by the cave mouth was marked by searchlights, stabbing up through the mists. Lightflyers whined in and out of the site.

They dropped over the ridge and slithered down the slope that had so nearly killed her to climb, hanging onto Rose's stirrup two days ago. Fully five kilometers down the trail, in a rocky region of treeless scrub, Bothari came

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED



LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

to an abrupt halt. "Sh. Milady, listen."

Voices. Men's voices, not far off, but strangely hollow. Cordelia stared into the darkness, but no lights moved. Nothing moved. They crouched beside the trail, senses straining.

Bothari crept off, head tilted, following his ears. After a few moments Cordelia and Gregor cautiously followed. She found Bothari kneeling by a striated outcrop. He motioned her closer.

"It's a vent," he announced in a whisper. "Listen."

The voices were much clearer now, sharp cadences, angry gutturals punctuated by swearing in two or three languages.

"Goddammit, I know we went left back at that third turn."

"That wasn't the third turn, that was the fourth."

"We recrossed the stream."

"It wasn't the same friggin' stream, *sabaki!*"

"*Merde. Perdu!*"

"Lieutenant, you're an idiot!"

"Corporal, you're out of line!"

"This cold light's not going to last the hour. See, it's fading."

"Well, don't shake it up, you moron, when it glows brighter it goes faster."

"Give me that—"

Bothari's teeth gleamed in the darkness. It was the first smile Cordelia had seen crack his face in months. Silently, he saluted her. They tiptoed softly away, into the chill of the Dendarii night.

Back on the trail, Bothari sighed deeply. "If only I'd had a grenade to drop down that vent. Their search parties would still be shooting at each other this time next week."

* * *

CHAPTER THIRTEEN

Four hours down the night trail, the distinctive black and white horse loomed out of the dark. Kly was a shadow aboard it, but his thick profile and battered hat were instantly recognizable.

"Bothari!" The name huffed from Kly's mouth. "We live. Grace of God."

Bothari's voice was flat. "What happened to you, Major?"

"I almost ran into one of Vordarian's squads at a cabin I was delivering mail to. They're actually trying to go over these hills house by house. Dosing everyone they meet with fast-penta. They must be bringing the drug in by the barrel."

"We expected you back last night," said Cordelia. She tried not to let her tone sound too accusing.

The felt hat bobbed as Kly gave her a weary nod of greeting. "Would've been, except for Vordarian's bloody patrol. I didn't dare let them question me. I spent a day and a night, dodging 'em. Sent my niece's husband to get you. But when he got to my place this morning, Vordarian's men were all over. I figured we'd lost everything. But when they were still all over by nightfall, I took heart. They wouldn't still be looking for you if they'd found you. Figured I'd better get my ass up here and do some scouting myself. This is beyond hope."

Kly turned his horse around, heading back down the trail. "Here, Sergeant, put the boy up."

"I can carry the boy. Think you'd better give m'lady a lift. She's about out."

Too true. It was a measure of Cordelia's exhaustion that she went willingly

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

to Kly's horse. Between them, Bothari and Kly shoved her aboard, perched astraddle on the pinto's warm rump. They started off, Cordelia gripping the mailman's coat.

"What happened to you?" Kly asked in turn.

Cordelia let Bothari answer, in his short sentences made even shorter by his burdened stride, as he carried Gregor piggyback. When he mentioned the men heard down the vent, Kly barked a laugh, then clapped a hand over his mouth. "They'll be weeks getting out of there. Good work, Sergeant!"

"It was Lady Vorkosigan's idea."

"Oh?" Kly twisted around to glance back over his shoulder at Cordelia, clinging wanly.

"Aral and Piotr both seemed to think diversion worthwhile," Cordelia explained. "I gather Vordarian has limited reserves."

"You think like a soldier, m'lady." Kly sounded approving.

Cordelia wrinkled her brow in dismay. What an appalling compliment. The last thing she wanted was to start thinking like a soldier, playing their game by their rules. The hallucinatory military world-view was horribly infectious, though, immersed in it as she was now. *How long can I tread water?*

Kly led them on another two hours of night marching, striking out on unfamiliar trails. In deep pre-dawn dark they came to a shack, or house. It seemed to be of similar construction to Kly's place, but more extensive, with rooms built on and the other rooms built on to the additions. A light from a tiny flame, some sort of greasy homemade candle, burned in a window.

An old woman in a nightgown and jacket, her grey hair in a braid down her back, came to the door and motioned them within. Another old man—but younger than Kly—took the horse out of sight toward a shed. Kly made to go with him.

"Is it safe here?" Cordelia asked dizzily. *Where is here?*

Kly shrugged. "They searched here day before yesterday. Before I sent for m'nephew-in-law. Checked it off clean."

The old woman snorted, surly memory in her eye.

"What with the caves, and all the unchecked homesteads, and the lake, it'll be a while before they get around to rechecking. They're still searching the lake bottom, I heard, they've flown in all kinds of equipment. It's as safe as any." He went off after his horse.

Meaning, as unsafe as any. Bothari was already taking his boots off. His feet must be bad. Her feet were a mess, her slippers walked to flinders, and Gregor's rag shoes utterly destroyed. She'd never felt so near the end of all endurance, bone-weary, blood-weary, though she'd done much longer hikes before. It was as if her truncated pregnancy had drained life itself out of her, to pass it on to another. She let herself be guided, fed bread and cheese and milk and put to bed in a little side room, herself on one narrow cot and drooping Gregor on another. She would believe in safety tonight the way Barrayaran children believed in Father Frost at Winterfair, true because she desperately wanted it to be.

The next day a raggedy boy of about ten appeared out of the woods, riding

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

Kly's sorrel horse bareback with a rope halter. Kly made Cordelia, Gregor, and Bothari hide out of sight while he paid the boy off with a few coins, and Sonia, Kly's aged niece, packed him some sweet cakes to speed him on his way. Gregor peered wistfully out the corner of one curtained window as the child vanished again.

"I didn't dare go myself," Kly explained to Cordelia. "Vordarian has three platoons of men up there now." A wheezing chuckle escaped him at some inner vision. "But the boy knows nothing but that the old mailman was sick and needed his re-mount."

"They didn't fast-penta that child, did they?"

"Oh, yes."

"They dared!"

Kly's black-stained lips compressed in sympathy with her outrage. "If he can't get hold of Gregor, Vordarian's coup is likely doomed. And he knows it. There's not much he wouldn't dare to do, at this point." He paused. "You can be glad fast-penta has replaced torture, eh?"

Kly's nephew-in-law helped him saddle up the sorrel, and buckle on the mailbags. The mailman adjusted his battered hat, and climbed up.

"If I don't keep my schedule, it will be near impossible for the Gen'ral to contact me," he explained. "Got to go, I'm late already. I'll be back. You and the boy stay inside, out of sight, as much as you can, m'lady." He turned his horse toward the bare-branched woods. The animal blended quickly into the red-brown native scrub.

Cordelia found Kly's last advice all too easy to follow. She spent most of the next four days in her cot-bed. The dull silence of hours went by in a fog, a relapse into the frightening fatigue she'd experienced after the placental transfer operation and its near-lethal complications. Conversation provided no diversion. The hill-folk were as laconic as Bothari. It was the threat of fast-penta, Cordelia thought. The less you know, the less you could tell. The eyes of the old woman, Sonia, probed Cordelia curiously, but she never asked anything beyond, "You hungry?" Cordelia didn't even know her last name.

Baths. After the first one, Cordelia did not ask again. The old couple worked all afternoon to haul and heat enough water for herself and Gregor. Their simple meals were nearly as much labor. No *Pull Tab To Heat Contents* up here. Technology, a woman's best friend. Unless the technology appeared in the form of a nerve disruptor in the hand of some dead-eyed soldier hunting you down as carelessly as an animal.

Cordelia counted over the days since the coup, since all hell had broken loose. What was happening, in the larger world? What response from the space forces, from planetary embassies, from conquered Komarr? Would Komarr seize the chaos to revolt, or had Vordarian taken them by surprise too? *Aral, what are you doing out there?*

Sonia, though she asked no questions, would now and then return from outings and drop bits of local news. Vordarian's troops, headquartered in Piotr's residence, were close to abandoning the search of the lake bottom. Hassadar was sealed, but refugees escaped in a trickle: someone's children, smuggled out, had arrived to stay with

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

relatives nearby. At Vorkosigan Surleau most of Piotr's Armsmen's families had escaped except Armsman Vogti's wife and very aged mother, who had been taken away in a groundcar, no one knew where.

"And, oh yes, very strange," Sonia added. "They took Karla Hysopi. That hardly makes sense. She was only the widow of a retired regular Service sergeant, what use do they expect to make of her?"

Cordelia froze. "Did they take the baby, too?"

"Baby? Donnia didn't say about a baby. Grandchild, was it?"

Bothari was sitting by the window sharpening his knife on Sonia's kitchen whetstone. His hand paused in midstroke. He looked up to meet Cordelia's alarmed eyes. Beyond a tightening of his jaw his face did not change expression, yet the sudden increase of tension in his body made Cordelia's stomach knot. He looked back down at what he was doing, and took a longer, firmer stroke that hissed along the whetstone like water on coals.

"Maybe . . . Kly will know something more, when he comes back," Cordelia quavered.

"Belike," said Sonia doubtfully.

At last, on schedule, on the evening of the seventh day, Kly rode into the clearing on his sorrel horse. A few minutes later Armsman Esterhazy rode in behind him. He was dressed in hillman's togs, and his mount was a lean and spindle-shanked hill horse, not one of Piotr's big glossy beasts. They put their horses away and came in to a dinner Sonia had apparently fixed this night of Kly's rounds for eighteen years.

After dinner they pulled up chairs to the stone fireplace, and Kly and Esterhazy briefed Cordelia and Bothari in low tones. Gregor sat by Cordelia's feet.

"Since Vordarian has greatly widened his search area," Esterhazy began, "Count and Lord Vorkosigan have decided that the mountains are still the best place to hide Gregor. As the search radius grows enemy forces will be spread thinner and thinner."

"Locally, Vordarian's forces are still hunting up and down the caves," Kly put in. "There's about two hundred men still up there. But as soon as they finish finding each other, I expect they'll pull out. I hear they've given up on finding you in there, milady. Tomorrow, Sire," Kly glanced down and addressed Gregor directly, "Armsman Esterhazy will take you to a new place, a lot like this one. You'll have a new name for a while, for pretend. And Armsman Esterhazy will pretend he's your Da. Think you can do that?"

Gregor's hand tightened on Cordelia's skirt. "Will Lady Vorkosigan pretend she's my Ma?"

"We're going to take Lady Vorkosigan back to Lord Vorkosigan, at Tanery Base Shuttleport." At Gregor's alarmed look Kly added, "There's a pony, where you're going. And goats. The lady there might teach you how to milk the goats."

Gregor looked doubtful, but did not fuss further, though the next morning as he was put up behind Esterhazy on the shaggy horse he looked near to tears.

Cordelia said anxiously, "Take care of him, Armsman."

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

Esterhazy gave her a driven look. "He's my emperor, m'lady. He holds my oath."

"He's also a little boy, Armsman. Emperor is . . . a delusion you all have in your heads. Take care of the emperor for Piotr, yes, but you take care of Gregor for me, eh?"

Esterhazy met her eyes. His voice softened. "My little boy is four, milady."

He did understand, then. Cordelia swallowed relief and grief. "Have you . . . heard anything from the capital? About your family?"

"Not yet," said Esterhazy bleakly.

"I'll keep my ears open. Do what I can."

"Thank you." He gave her a nod, not as retainer to his lady; but as one parent to another. No other word seemed necessary.

Bothari was out of earshot, having returned to the cabin to pack up their few supplies. Cordelia went to Kly's stirrup, as he prepared to swing his black and white horse about and lead Esterhazy and Gregor on their way. "Major. Sonia passed on a rumor that Vordarian's troops took Mistress Hysopi. Bothari had hired her to foster his baby girl. Do you know if they took Elena—the baby—too?"

Kly lowered his voice. "Twas the other way around, as I have it. They went for the baby. Mistress Hysopi raised hell, so they took her too even though she wasn't on the list."

"Do you know where?"

He shook his head. "Somewhere in Vorbarr Sultana. Belike your husband's intelligence will know exactly, by now."

"Have you told the Sergeant yet?"

"His brother Armsman told him, last night."

"Ah."

Gregor looked back over his shoulder at her as they rode away, until they were obscured from sight by the tree-boles.

For three days Kly's nephew guided them through the mountains. Bothari, on foot, leading Cordelia on a bony-hipped little hill horse with a sheepskin pad cinched to its back. On the third afternoon, they came to a cabin that sheltered a skinny youth who led them to a shed that held, wonder of wonders, a rickety lightflyer. He loaded up the back seat with Cordelia and six jugs of maple syrup. Bothari shook hands silently with Kly's nephew, who mounted the little horse and vanished into the woods.

Under Bothari's narrow eye, the skinny youth coaxed his vehicle into the air. Brushing treetops, they followed ravines and ridges up over the snow-frosted spine of the mountains and down the other side, out of the Vorkosigan's District. They came at dusk to a little market town. The youth brought his flyer down in a side street. Cordelia and Bothari helped him carry his gurgling produce to a small grocer's shop, where he bartered the syrup for coffee, flour, soap, and power cells.

Upon returning to his lightflyer, they found that a battered groundtruck had pulled up and parked behind it. The youth exchanged no more than a nod with its driver, who hopped out and slid the door to the cargo bay aside for Bothari and Cordelia. The bay was a quarter full of fiber sacks of cabbages. They did not make very good pillows, though

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

Bothari did his best to arrange Cordelia a nest of them as the truck rocked along above the dismally uneven roads. Bothari then sat wedged against the side of the cargo bay and compulsively polished the edge of his knife to molecular sharpness with a makeshift strop, a bit of leather he'd begged from Sonia. Four hours of this and Cordelia was ready to start talking to the cabbages.

The truck thumped to a halt at last. The door slid aside, and first Bothari then Cordelia emerged to find themselves in the middle of nowhere: a gravel-surfaced road over a culvert, in the dark, in the country, in an unfamiliar District of unknown loyalties.

"They'll pick you up at kilometer marker 96," the truck driver said, pointing to a white smudge in the dimness that appeared to be merely a painted rock.

"When?" asked Cordelia desperately. For that matter, who was they?

"Don't know." The man returned to his truck and drove off in a spray of gravel from the hoverfan, as if he were already pursued.

Cordelia perched on the painted boulder and wondered morbidly which side was going to leap out of the night first, and by what test she might tell them apart. Time passed, and she entertained an even more depressed vision of no one picking them up at all.

But at last a darkened lightflyer floated down out of the night sky, its engines pitched to eerie near-silence. Its landing feet crunched in the gravel. Bothari crouched beside her, his useless knife gripped in his hand. But the man awkwardly levering himself up out of the passenger seat was Lieutenant Koudelka. "Milady?" he called uncertainly to the two human scarecrows. "Sergeant?" A breath of pure delight puffed from Cordelia as she recognized the pilot's blonde head as Droushnakovi. *My home is not a place, it is people, sir. . . .*

With Bothari's hand on her elbow, at Koudelka's anxious gesture Cordelia fell gratefully into the padded back seat of the flyer. Droushnakovi cast a dark look over her shoulder at Bothari, wrinkled her nose, and asked, "Are you all right, milady?"

"Better than I expected, really. Go, go."

The canopy sealed, and they rose into the air. Vent fans powered up, cycling filtered air. Colored lights from the control interface highlighted Kou and Drou's faces. A technological cocoon. Cordelia glanced at systems readouts over Droushnakovi's shoulder, and then up through the canopy; yes, dark shapes paced them, guardian military flyers. Bothari saw them too, his eyes narrowing in approval. Some fraction of tension eased from his body.

"Good to see you two—" some subtle cue of their body language, some hidden reserve, kept Cordelia from adding *together again*. "I gather you got that accusation about the comconsole sabotage straightened out in good order?"

"As soon as we got the chance to stop and fast-penta that guard corporal, milady," Droushnakovi answered. "He didn't have the nerve to suicide before questioning."

"He was the saboteur?"

"Yes," answered Koudelka. "He'd intended to escape to Vordarian's troops

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

when they arrived to capture us. Vordarian apparently suborned him months ago."

"That accounts for our security problems. Or does it?"

"He passed information about our routes, the day of the sonic grenade attempt." Koudelka rubbed at his sinuses in memory.

"So it was Vordarian behind that!"

"Confirmed. But the guard doesn't seem to have known anything about the soltoxin. We turned him inside-out. He wasn't a high level conspirator, just a tool."

Nasty flow of thought, but, "Has Illyan reported in yet?"

"Not yet. Admiral Vorkosigan hopes he may be hiding in the capital, if he wasn't killed in the first fighting."

"Hm. Well, you'll be glad to know Gregor's all right—"

Koudelka held up an interrupting hand. "Excuse me, milady. The Admiral ordered—you and the Sergeant are not to debrief anything about Gregor to anyone except Count Piotr or himself."

"All right. Damn fast-penta. How is Aral?"

"He's well, milady. He ordered me to bring you up to date on the strategic situation—"

Screw the strategic situation, what about my baby? Alas, the two seemed inextricably intertwined.

"—and answer any questions you had."

Very well. "What about our baby? Pi—Miles?"

"We've heard nothing bad, milady."

"What does that mean?"

"It means we've heard nothing." Droushnakovi put in glumly.

Koudelka shot her an irate look, which she shrugged off with a twitch of one shoulder.

"No news may be good news," Koudelka went on. "While it's true Vordarian holds the capital—"

"And therefore, ImpMil, yes," said Cordelia.

"And's he publicizing names of hostages related to anyone in our command structure, there's been no mention of, of your child, in the lists. The Admiral thinks Vordarian simply doesn't realize that what went into the replicator was viable. Doesn't know what he's got."

"Yet," bit off Cordelia.

"Yet," Koudelka conceded reluctantly.

"All right. Go on."

"The overall situation isn't as bad as we feared at first. Vordarian holds Vorbarr Sultana, his own District and its military bases, and he's put troops in Vorkosigan's District, but he only has about five District counts who are his committed allies. About thirty of the other counts were caught in the capital, and we can't tell their real allegiance while Vordarian holds guns to their heads. Most of the twenty-three remaining Districts have reiterated their oaths to my Lord Regent. Though a couple are waffling, those who have relatives in the capital or who are in dicy strategic positions as potential battlefields."

"And the space forces?"

"I was just coming to them, yes, milady. Over half of their supplies come up from the shuttleports in Vordarian's District. For the moment, they're still holding out for a clear result rather than moving in to create one. But they've

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

refused to openly endorse Vordarian. It's a balance, and whoever can tip it their way first will start a landslide. Admiral Vorkosigan seems awfully confident." Cordelia was not sure from the lieutenant's tone if he altogether shared that confidence. "But then, he has to. For morale. He says Vordarian lost the war the hour Negri got away with Gregor, and the rest is just maneuvering to limit the losses. But Vordarian holds Princess Kareen."

"Doubtless one of the losses Aral is anxious to limit. Is she all right? Vordarian's goons haven't abused her?"

"Not as far as we know. She seems to be under house arrest in her own rooms in the Imperial Residence. Several of the more important hostages have been secluded there."

"I see." She glanced sideways in the dim cabin at Bothari, who did not change expression. She waited for him to ask after Elena, but he said nothing. Droushnakovi stared bleakly into the night, at the mention of Kareen.

Had Kou and Drou made up? They seemed cool, civil, all duty and on duty. But whatever surface apologies had passed, Cordelia sensed no healing in them. The secret adoration and will-to-trust was all gone from the blue eyes that now and then flicked from the control interface to the man in the passenger seat. Kou's glances were merely wary.

Lights glowed ahead on the ground, the spatter of a middle-sized city, and beyond it, the jumbled geometrics of a sprawling military shuttleport. Drou went through code-check after code-check, as they approached. They spiraled down to a pad that lit for them, peopled with armed guards. Their guard-flyers passed on overhead to their own landing zones.

The guards surrounded them as they exited the flyer, and escorted them as fast as Koudelka's pace would permit to a lift tube. They went down, took a slide-walk, and went down again through blast doors. Tanery Base clearly featured a hardened underground command post. Welcome to the bunker. And yet a throat-catching whiff of familiarity shook Cordelia for a terrifying moment of confusion and loss. Beta Colony did a lot better on the interior decorating than these barren corridors, but she might have descended to the utility level of some buried Betan city, safe and cool. . . . *I want to go home.*

There were three green-uniformed officers, talking in a corridor. One was Aral. He saw her. "Thank you, dismissed, gentlemen," he said in the middle of someone's sentence, then more consciously, "We'll continue this shortly." But they lingered to goggle.

He looked no worse than tired. Her heart ached to look at him, and yet . . . *Following you has brought me here. Not to the Barrayar of my hopes, but to the Barrayar of my fears.*

With a voiceless "Ha!" he embraced her, hard to him. She hugged him back. *This is a good thing. Go away, World.* But when she looked up the World was still waiting, in the form of seven watchers all with agendas.

He held her away, and scanned her anxiously up and down. "You look terrible, dear Captain."

At least he was polite enough not to say, You *smell* terrible. "Nothing a bath won't cure."

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

"That is not what I meant. Sickbay for you, before anything." He turned to find Sergeant Bothari first in line.

"Sir, I must report in to my lord Count," Bothari said.

"Father's not here. He's on a diplomatic mission from me to some of his old cronies. Here, you, Kou—take Bothari and set him up with quarters, food chits, passes, and clothes. I'll want your personal report immediately when I've seen to Cordelia, Sergeant."

"Yes, sir." Koudelka led Bothari away.

"Bothari was amazing," Cordelia confided to Aral. "No—that's unjust. Bothari was Bothari, and I shouldn't have been amazed at all. We wouldn't have made it without him."

Aral nodded, smiling a little. "I thought he would do for you."

"He did indeed."

Droushnakovi, taking up her old position at Cordelia's elbow the moment Bothari vacated it, shook her head in doubt, and followed along as Aral steered Cordelia down the corridor. The rest of the parade followed less certainly.

"Hear any more about Illyan?" Cordelia asked.

"Not yet. Did Kou brief you?"

"A sketch, enough for now. I don't suppose any more word's come in on Padma and Alys Vorpatril, then, either?"

He shook his head regretfully. "But neither are they on the list of Vordarian's confirmed captures. I think they're hiding in the city. Vordarian's side is leaking information like a sieve, we'd know if any arrest that important had happened. I can only wonder if our own arrangements are so porous. That's the trouble with these damned civil affrays, everybody has a brother—"

A voice from down the corridor hailed loudly, "Sir! Oh, sir!" Only Cordelia felt Aral flinch, his arm jerking under her hand.

An HQ staffer led a tall man in black fatigues with colonel's tabs on the collar toward them. "There you are, sir. Colonel Gerould is here from Marigrad."

"Oh. Good. I have to see this man now. . . ." Aral looked around harriedly, and his eyes fell on Droushnakovi. "Drou, please escort Cordelia to the infirmary for me. Get her checked, get her—get her everything."

The colonel was no HQ desk pilot. He looked, in fact, like he'd just flown in from some front line, wherever the "front" was in this war for loyalties. His fatigues were dirty and wrinkled and looked slept-in, their smoke-stink eclipsing Cordelia's mountain-reek. His face was lined with fatigue. But he looked only grim, not beaten. "The fighting in Marigrad has gone house-to-house, Admiral," he reported without preamble.

Vorkosigan grimaced. "Then I want to hopscotch it. Come with me to the tactics room—*what* is that on your arm, Colonel?"

A wide piece of white cloth and a narrow strip of brown circled the officers' black upper left sleeve. "ID, sir. We couldn't tell who we were shooting at, up close. Vordarian's people are wearing red and yellow, 's as close as they could come to maroon and gold, I guess. That's supposed to be brown and silver for Vorkosigan, of course."

"That's what I was afraid of." Vor-

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

kosigan looked extremely stern. "Take it off. Burn it. And pass the word down the line. You already have a uniform, Colonel, issued to you by the emperor. That's who you're fighting for. Let the traitors alter their uniforms."

The colonel looked shocked at Vorkosigan's vehemence, but, after a beat, enlightened; he stripped the cloth hastily from his arm and stuffed it in his pocket. "Right, sir."

Aral let go of Cordelia's hand with a palpable effort. "I'll meet you in our quarters, love. Later."

Later in the week, at this rate. Cordelia shook her head helplessly, took in one last view of his stocky form as if her intensity could somehow digitize and store him for retrieval, and followed Droushnakovi into Tanery Base's underground warren. At least with Drou, Cordelia was able to overrule Vorkosigan's itinerary and insist on a bath first. Almost as good, she found half a dozen new outfits in her correct size, betraying Drou's palace-trained good taste, waiting for her in a closet in Aral's quarters.

The base doctor had no charts; Cordelia's medical records were of course all behind enemy lines in Vorbarr Sultana at present. He shook his head and keyed up a new form on his report panel. "I'm sorry, Lady Vorkosigan. We'll simply have to begin at the beginning. Please bear with me. Do I understand correctly you've had some sort of female trouble?"

No, most of my troubles have been with males. Cordelia bit her tongue. "I had a placental transfer, let me see, three plus," she had to count it up on her fingers, "about five weeks ago."

"Excuse me, a what?"

"I gave birth by surgical section. It did not go well."

"I see. Five weeks post-partum." He made a note. "And what is your present complaint?"

I don't like Barrayar, I want to go home, my father-in-law wants to murder my baby, half my friends are running for their lives, and I can't get ten minutes alone with my husband, whom you people are consuming before my eyes, my feet hurt, my head hurts, my soul hurts . . . it was all too complicated. The poor man just wanted something to put in his blank, not an essay. "Fatigue," Cordelia managed at last.

"Ah." He brightened, and entered this factoid on his report panel. "Postpartum fatigue. This is normal." He looked up and regarded her earnestly. "Have you considered starting an exercise program, Lady Vorkosigan?"

CHAPTER FOURTEEN

"Who are Vordarian's men?" Cordelia asked Aral in frustration. "I've been running from them for weeks, but it's like I've only glimpsed them in a rearview mirror. Know your enemy and all that. Where does he get this endless supply of goons?"

"Oh, not endless." Aral smiled slightly, and took another bite of stew. They were—miracle—alone at last, in his simple underground senior officer's apartment. Their supper had been brought in on a tray by a batman, and spread on a low table between them. Aral had then, to Cordelia's relief, ejected this hovering minion with a "Thank you, Corporal, that will be all."

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

Aral swallowed his bite and continued, "Who are they? For the most part, anyone who was caught with an officer up along his chain of command who elected Vordarian's side, and who hasn't worked up the nerve, or in some cases the wit, to either frag the officer or desert his unit and report in elsewhere. And obedience and unit cohesion is deeply inculcated in these men. 'When the going gets rough, stick to your unit' is literally drilled into them. So the unfortunate fact that their officer is leading them into treason makes clinging to their squad-brothers even more natural. Besides," he grinned bleakly, "it's only treason if Vordarian loses."

"And is Vordarian losing?"

"As long as I live, and keep Gregor alive, Vordarian cannot win." He nodded in conviction. "Vordarian is imputing crimes to me as fast as he can invent them. Most serious is the rumor he's floating that I've made away with Gregor and seek the Imperium for myself. I judge this a ploy to smoke out Gregor's hiding place. He knows that Gregor's not with me. Or he'd be tempted to lob a nuclear in here."

Cordelia's lips curled in aversion. "So does he want to capture Gregor, or kill him?"

"Kill only if he can't capture. I will, when the time is right, produce Gregor."

"Why not right now?"

He sat back with a tired sigh, and pushed away his tray with a few bites of stew and a ragged bread shred still left in his bowl. "Because I wish to see how many of Vordarian's forces I can woo back to my side before the denouement. I don't wish to inaugurate my second year of office with four thousand military executions. All below a certain rank can be given a blanket pardon on the grounds that they were oath-bound to follow their officers, but I want to save as many of the senior men as I can. Five District counts and Vordarian are doomed now, no hope for them. *Damn* him for starting this."

"What are Vordarian's troops doing? Is this a sitzkrieg?"

"Not quite. He's wasting a lot of his time and mine, trying to gain a couple of useless strong points, like the supply depot at Marigrad. We oblige and draw him in, or out. It keeps Vordarian's commanders occupied, and their minds off the real high ground, which are the space-based forces. If only I had Kanzian!"

"Have your intelligence people located him yet?" The admired Admiral Kanzian was one of the two men in the Barrayaran High Command whom Vorkosigan regarded as his superiors in strategy. Kanzian was an advanced space operations specialist; the space-based forces had great faith in him. "No horse manure stuck on *his* boots," was the way Kou had once expressed it, to Cordelia's amusement.

"No, but Vordarian doesn't have him either. He's vanished. Hope to God he wasn't caught in some stupid street cross-fire and is lying unidentified on a slab somewhere. What a waste that would be."

"Would going up help? To sway the space forces?"

"Why d'you think I'm troubling to hold Tanery Base? I've considered the pros and cons of moving my field HQ

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

aboard ship. I think not yet; it could be misinterpreted as the first step in running away."

Running away. What a seductive thought. Far, far away from all this lunancy, till it was all reduced to the single dimension of a minor filler in some galactic news vid. But . . . run away from Aral? She studied him, as he sat back on the padded sofa, staring at but not seeing the remains of his supper. A weary middle-aged man in a green uniform, of no particular handsomeness (except perhaps for the sharp grey eyes), a hungry intellect at constant internal war with fear-driven aggression, each fueled by a lifetime crowded with bizarre experience; Barrayaran experience. *You should have fallen in love with a happy man, if you wanted happiness. But no, you had to fall for the breathtaking beauty of pain. . . .*

The two shall be made one flesh. How literal that ancient pious mouthing had turned out to be. One little scrap of flesh, prisoned in a uterine replicator behind enemy lines, bound them now like Siamese twins. And if little Miles died, would that bond be slashed?

"What . . . what are we doing about Vordarian's hostages?"

He sighed. "That is the hard nut in the center. Stripped of everything else, as we are gradually doing, Vordarian still holds over twenty District counts and Kareen. And several hundred lesser folk."

"Such as Elena?"

"Yes. And the city of Vorbarr Sultana itself, for that matter. He could threaten to atomize the city, at the end, to get passage off-planet. I've toyed with the idea of dealing. Have him assassinated later. Can't just let him go free, it would be unjust to all those who've died already in loyalty to me. What burning could satisfy those betrayed souls? No.

"So we're planning various rescue-raid options, for the end. The moment when the shift in men and loyalties reaches critical mass, and Vordarian really starts to panic. Meanwhile we wait. In the end . . . I'll sacrifice hostages before I'll let Vordarian win." His unseeing stare was black, now.

"Even Kareen?" *All the hostages? Even the tiniest?*

"Even Kareen. She is Vor. She understands."

"The surest proof I am not Vor," said Cordelia glumly. "I don't understand any of this . . . stylized madness. I think you should all be in therapy, every last one of you."

He smiled slightly. "Do you think Beta Colony could be persuaded to send us a battalion of psychiatrists as humanitarian aid? The one you had that last argument with, perhaps?"

Cordelia snorted. Well, Barrayaran history did have a sort of weird dramatic beauty, in the abstract, at a distance. A passion play. It was close up that the stupidity of it all became more palpable, dissolving like a mosaic into meaningless squares.

Cordelia hesitated, then asked, "Are we playing the hostage game?" She was not sure she wanted to hear the answer.

Vorkosigan shook his head. "No. That's been my toughest argument, all week, to look men in the eyes who have wives and children up in the capital, and say No." He arranged his cutlery neatly on his tray, in its original pattern, and

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

added in a meditative tone, "But they aren't looking widely enough. This is not, so far, a revolution, merely a palace coup. The population is inert, or rather, lying low, except for some informers. Vordarian is making his appeals to the elite conservatives, old Vor, and the military. The Count can't count. The new technoculture is producing plebe progressives as fast as our schools can crank them out. They are the majority of the future. I wish to give them some method besides colored armbands to distinguish the good guys from the bad guys. Moral suasion is a more powerful force than Vordarian suspects. What old Earth general said that the moral is to the physical as three to one? Oh, Napoleon, that was it. Too bad he didn't follow his own advice. I'd put it as five to one, for this particular war."

"But do your powers balance? What about the physical?"

Vorkosigan shrugged. "We each have access to enough weapons to lay Barrayar to waste. Raw power is not really the issue. But my legitimacy is an enormous advantage, as long as weapons must be manned. Hence Vordarian's attempts to undercut that legitimacy with his accusations about my doing away with Gregor. I propose to catch him in his lie."

Cordelia shivered. "You know, I don't think I would care to be on Vordarian's side."

"Oh, there are still a few ways he could win. My death is entailed in all of them. Without me as a focus, the only Regent annointed by the late Ezar, what's to choose? Vordarian's claim is then as good as anyone's. If he killed me, and got possession of Gregor, or vice versa, he could conceivably consolidate from there. Till the next coup, and train of revolts and vengeance-killings rebounding into the indefinite future . . . " His eyes narrowed, as he contemplated this dark vision. "That's my worst nightmare. That this war won't stop if we lose, till another Dorca Vorbarra the Just arises to put an end to another Bloody Century. God knows when. Frankly, I don't see a man of that caliber among my generation."

Check your mirror, thought Cordelia somberly.

"Ah, so *that's* why you wanted me to see the doctor first," Cordelia teased Aral that night. The doctor, once Cordelia had adjusted a few of his confused assumptions, had examined her meticulously, changed his prescription from exercise to rest, and cleared her to resume marital relations, with caution. Aral merely grinned, and made love to her as if she were spun glass. His own recovery from the soltoxin was nearly complete, she judged from this. He slept like a rock, only warmer, till the comconsole woke them at dawn. There must have been some military conspiracy at work, for it not to have lit up before then. Cordelia pictured some understaffer confiding to Kou, "Yeah, let's let the Old Man get laid, maybe he'll mellow out. . . ."

Still, the miserable fatigue-fog lifted faster this time. Within a day, with Droushnakovi for escort, Cordelia was up and exploring her new surroundings.

She ran across Bothari in the base gymnasium. Count Piotr had not yet returned, so once he'd debriefed to Aral Bothari had no duties either. "Got to

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

keep in training," he told her shortly.

"You been sleeping?"

"Not much," he said, and resumed his running. Compulsively, too long, far past the optimum effect-for-time-spent trade-off. He sweated to fill time and kill thought, and Cordelia silently wished him luck.

She caught up on the details of the war from Aral and Kou and the controlled newsvids. What counts were allied, who was known hostage and where, what units were deployed on each side and which were ripped apart and scattered to both; where fighting had taken place, what damages, which commanders had renewed oath . . . knowledge without power. No more, she judged, than her intellectualized version of Bothari's endless running; nothing to distract her mind from unbroken concentration on all the horrors and disasters, past or impending, that she could presently do nothing about.

She preferred her military history with more temporal displacement. A century or two in the past, say. She imagined some cool future scholar looking through a time-telescope at her, and gave him a mental rude gesture. Anyway, she now realized, the military histories she'd read had left out the most important part; they never told what happened to people's babies.

No—they were all babies, out there. Every mother's son in a black uniform. One of Aral's reminiscences floated up in her memory, velvet voice rumbling, "It was about that time that soldiers started looking like children to me. . . ."

She pushed away from the vidconsole, and went to search the bathroom for medication for pain.

On the third day she passed Lieutenant Koudelka in a corridor, stumping along at a near run, his face flushed with excitement.

"What's up, Kou?"

"Illyan's here. And he's brought Kanzian with him!"

Cordelia followed him to a briefing room. Droushnakovi had to lengthen even her long stride to keep up. Aral, flanked by two staffers, sat with his hands clasped on the table before him, listening with utmost attention. Commander Illyan sat on the edge of the table, swinging one leg in rhythm to his voice. A bandage on his left arm was stained with yellow seepage. He was pale and dirty, but his eyes shone in triumph, gilded with a touch of fever. He wore civilian gear that looked as if it had been stolen out of someone's laundry, and then rolled downhill in.

An older man was sitting beside Illyan—a staffer handed the man a drink, which Cordelia recognized as a potassium-salts-laced-fruit-flavored-pick-me-up for the metabolically depleted. He tasted it dutifully, and made a face, looking as if he would have preferred some more old-fashioned revivifier such as brandy. Overweight and undertall, greying where he was not balding, Admiral Kanzian was not a very martial-looking man. He looked grandfatherly—though only if your grandfather was a research professor. His face was held together with an intensity of intellect that seemed to give the term "military science" real clout. Cordelia had met him in uniform; his air of quiet authority seemed unaffected by civilian

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

shirt and slacks that might have come from the same laundry basket as Illyan's.

Illyan was saying, "—and then we spent the next night in the cellar. Vordarian's squad came back the next morning, but—milady!"

His grin of greeting was blunted by a flash of guilt, as he glanced to and away from her waist. She'd rather he kept piffling on, excited about his adventures, but her arrival seemed to deflate him, ghost of his most notable failure at his banquet of victory.

"Wonderful to see you both, Simon, Admiral." They exchanged nods; Kanzian made to rise, but was unanimously waved back to his seat, which made his lips twist in bemusement. Aral signed her to sit next to him.

Illyan continued in a more clipped fashion. His past two weeks of hide-and-seek with Vordarian's forces seemed to parallel Cordelia's, though in the far more complex setting of the seized capital. But Cordelia recognized the familiar terrors under his plain words. He brought his tale swiftly up to the present moment. Kanzian nodded an occasional confirmation.

"Well done, Simon," said Vorkosigan when Illyan concluded. He nodded toward Kanzian. "Extremely well done."

Illyan smiled. "Thought you'd like it, sir."

Vorkosigan turned to Kanzian. "As soon as you feel able, I would like to brief you in the tac room, sir."

"Thank you, my lord. I've been out of communications—except for Vordarian's news casts—since I escaped headquarters. Though there was much to be deduced from what we did see. By the way, I commend your strategy of restraint. Good so far. But you're close to its limits."

"So I've sensed, sir."

"What's Jolly Nolly doing at Jumppoint Station One?"

"Not answering his tightbeam. Last week his understaffers were offering an amazing array of excuses, but their ingenuity finally dried up."

"Ha. I can just picture it. His colitis must be in wonderful form. I'll bet not all of those 'indisposeds' were lies. I think I should begin with a private chat with Admiral Knollys, just the two of us."

"I would appreciate that, sir."

"We will discuss the inevitabilities of time. And the defects of a potential commander who bases an entire strategy on an assassination he then does not succeed in carrying out." Kanzian frowned judgmentally. "Not well constructed, to let your whole war turn on one event. Vordarian always did have a tendency to pop off."

Cordelia, aside, caught Illyan's eye. "Simon. Did you pick up any information at all, while you were trapped in Vorbarr Sultana, about the Imperial Military Hospital? Vaagen and Henri's lab?" *My baby?*

Regretfully, he shook his head. "No, milady." Illyan glanced in turn at Vorkosigan. "My lord, is it true about Captain Negri's death? We'd only heard it from rumor, and Vordarian's propaganda broadcasts. Thought it might have been a lie."

"Negri is dead. Unfortunately." Vorkosigan grimaced.

Illyan sat upright in alarm. "And the

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

Emperor too?"

"Gregor is safe and well."

Illyan slumped again. "Thank God. Where?"

"Elsewhere," said Vorkosigan dryly.

"Oh. Quite, sir. Beg pardon."

"As soon as you've hit sickbay and the showers, Simon, I have some housecleaning chores for you," Vorkosigan continued. "I want to know just exactly how ImpSec was blindsided by Vordarian's coup. I have no wish to malign the dead—and God knows the man paid for his mistakes—but Negri's old personal system for running ImpSec, with all his little secret compartments shared only with Ezar, has to be taken completely apart. Every component, every man reexamined, before it's all put back together. That will be your first job as the new Chief of Imperial Security. Captain Illyan."

Illyan's face went from pale-tired to green-white. "Sir—you want me to step into *Negri's* shoes?"

"Shake them out, first," Vorkosigan advised dryly. "And with dispatch, if you please. I cannot produce the Emperor until ImpSec is again fit to guard him."

"Yes, sir." Illyan's voice was thin with his staggerment.

Kanzian levered out of his seat, shrugging off the help of an anxious staff officer. Aral squeezed Cordelia's hand under the table, and rose to accompany the nucleus of his new general staff. As they all exited, Kou grinned over his shoulder at Cordelia and whispered. "Things are looking up, eh?"

She smiled bleakly back at him. Vorkosigan's words echoed in her head. *When the shift in men and loyalties reaches the critical point, and Vordarian starts to panic . . .*

The trickle of refugees appearing at Tanery Base became a steady stream, as the week wore on. The most spectacular after Kanzian was the break-out of Prime Minister Vortala from Vordarian's house arrest. He arrived with several wounded liveried men and a hair-raising tale of bribery, trickery, chase, and exchange-of-fire. Two lesser Imperial ministers also turned up, one on foot. Morale rose with each notable addition. The base's atmosphere grew electric with anticipation of action. The question exchanged by staffers in corridors became not, Who's come in? but Who's come in this morning? Cordelia tried to appear cheered by it all, hugging her dread to her private mind. Vorkosigan grew both pleased and tenser.

As instructed, Cordelia rested a lot in Vorkosigan's quarters. All too soon she felt reenergized enough to start beating on the walls. She then tried varying the prescription with a few experimental push-ups and knee-bends (but not sit-ups). She was just contemplating the merits and drawbacks of going to join Bothari in the gym, when the comconsole chimed.

Koudelka's apprehensive face appeared over the vid plate. "Milady, m'lord requests you join him now in Briefing Room Seven. Something's come in he wants you to see."

Cordelia's stomach knotted. "All right. On my way."

An array of men were waiting in Briefing Room Seven, clustered around a vidconsole in low-voiced debate.

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

Staffers, Kanzian, Minister Vortala himself. Vorkosigan looked up and gave her a brief, unfelt smile.

"Cordelia. I'd like your opinion on something that's come in."

Flattering, but, "What sort of something?"

"Vordarian's latest special report has a new twist. Kou, replay the vid, please."

Vordarian's propaganda broadcasts from the capital were mostly subjects for derision, among Vorkosigan's men. Their faces looked rather more serious, this time.

Vordarian appeared in what was recognizably one of the state rooms of the Imperial Residence, the formal and serene Blue Room. Ezar Vorbarra used to make his rare public pronouncements from that background. Vorkosigan frowned.

Vordarian was seated, in full dress greens, on an ivory silk sofa, Princess Kareen at his side. Her dark hair was pulled back severely from her oval face with jewelled combs. She wore a striking black gown, somber and formal.

Vordarian spoke only a few earnest words, invoking the viewers' attention. Then the vid cut away to the great chamber of the Council of Counts at Vorhartung Castle. The vid zoomed in on the Lord Guardian of the Speaker's circle, dressed in his full regalia. The vid did not show what, besides its own pickup, was aimed at the Lord Guardian's head, but something in his repeated looks, just to one side instead of directly at the focus, made Cordelia place a lethally-armed man, or maybe a squad, in that unseen position.

The Lord Guardian raised a plastic flimsy, and began, "I quote—due to the—"

"Ah, slick!" murmured Vortala, and Koudelka paused the vid to say, "I beg your pardon, Minister?"

"The I-quote—he's just legally distanced himself from the words about to come off that flimsy and out his mouth. Didn't catch that, the first time. Good, Georgeos, good," Vortala addressed the paralyzed figure. "Go on, Lieutenant, I didn't mean to interrupt."

The holovid image continued, "—vile murder of the child-emperor Gregor Vorbarra, and betrayal of his sacred oaths by the would-be usurper Vorkosigan, the Council of Counts declares the false Regent faithless, outcast, stripped of powers and outlawed. This day the Council of Counts confirms Commodore Count Vidal Vordarian as Prime Minister and acting Regent for Dowager-Princess Kareen Vorbarra, forming an emergency caretaker government until such time as a new heir may be found and confirmed by the Council of Counts and Council of Ministers in full council assembled."

He continued with further legalities, as the vid panned the chamber. "Freeze it, Koudelka," Vortala demanded. His lips moved as he counted. "Ha! Not even one-third present. He doesn't have near a quorum. Who does he think he's fooling?"

"Desperate man, desperate measures," Kanzian murmured as the holo continued at Koudelka's touch.

"Watch Kareen," Vorkosigan said to Cordelia.

The holo cut back to Vordarian and the princess. Vordarian went on in such mealy terms, it took Cordelia a moment

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

to unravel the fact that in the phrase "personal protection," Vordarian was announcing the engagement of marriage. His hand closed earnestly over Kareen's, though his eye-contact was reserved for the holovid. Kareen lifted her hand to receive a ring without changing her calm expression in the slightest. The vid closed with solemn music. The End. They were thankfully spared Betan-style post-mortem commentary; apparently, nobody ever asked the Barrayaran-in-the-street much of anything, at least until major rioting raised the volume to a level no one dared ignore.

"How would you analyze Kareen's reaction?" Aral asked Cordelia.

Cordelia's brows rose. "What reaction? How, analyze? She never said a word!"

"Just so. Does she look drugged to you? Or under compulsion? Or was that real assent? Is she duped by Vordarian's propaganda, or what?" Frustrated, Vorkosigan eyed the space where the woman's image had lately been. "She's always been reserved, but that was the most unreadable performance I've ever seen."

"Run it again, Kou," said Cordelia. She had him stop at the best views of Kareen. She studied the frozen face, scarcely less animate than when the holo was running. "She doesn't look woozy or sedated. And her eyes don't look aside the way the Speaker's did."

"Nobody threatening her with a weapon?" Vortala guessed.

"Or perhaps she simply doesn't care," Cordelia suggested grimly.

"Assent, or compulsion?" Vorkosigan repeated.

"Maybe neither. She's been dealing with this sort of nonsense all her adult life. . . . What do you expect of her? She survived three years of marriage with Serg, before Ezar sheltered her. She must be a bona fide expert in guessing what not to say and when not to say it."

"But to publicly submit to Vordarian—if she thinks he's responsible for Gregor's death. . . ."

"Yes, what does she believe? If she truly thinks her son is dead—even if she doesn't believe you killed him—then all she has left to look out for is her own survival. Why risk that survival for some dramatic futility, if it won't help Gregor? What does she owe you, owe us, after all? We've all failed her, as far as she knows."

Vorkosigan winced.

Cordelia went on, "Vordarian's been controlling her access to information, surely. She may even be convinced he's winning. She's a survivor; she's survived Serg and Ezar, so far. Maybe she means to survive you and Vordarian both. Maybe the only revenge she thinks she'll ever get is to live long enough to spit on all your graves."

One of the staff officers muttered, "But she's Vor. She should have defied him."

Cordelia favored him with a glittery grin. "Oh, but you never know what any Barrayaran woman thinks by what she says in front of Barrayaran men. Honesty is not exactly rewarded, you know."

The staffer gave her an unsettled look. Drou smiled sourly. Vorkosigan blew out his breath. Koudelka blinked.

"So, Vordarian gets tired of waiting

LICENSED TO ANALOG
ELECTRONIC REPRODUCTION PROHIBITED

and appoints himself Regent," Vortala murmured.

"And prime minister," Vorkosigan pointed out in return.

"Indeed, he swells."

"Why not go straight for the Imperium?" asked the staff officer.

"Testing the waters," said Kanzian.

"It's coming, later in the script," opined Vortala.

"Or maybe sooner, if we force his hand a bit," suggested Kanzian. "The last and fatal step. We must consider how to rattle him just a little more."

"Not much longer," Vorkosigan said firmly.

The ghostly mask of Kareen's face hung before Cordelia's mind's eye all that day, and returned at her waking the next morning. What did Kareen think? What did Kareen feel, for that matter? Perhaps she was as numb as the evidence suggested. Perhaps she was biding her time. Perhaps she was all for Vordarian. *If I knew what she believed, I'd know what she was doing. If I knew what she was doing, I'd know what she believed.*

Too many unknowns in this equation. *If I were Kareen* . . . was this a valid analogy? Could Cordelia reason from herself to another? Could anyone? They had likenesses, Kareen and herself, both women, near in age, mothers of endangered sons. . . . Cordelia took Gregor's shoe from her meager pile of mountain souvenirs, and turned it in her hand. *Mama grabbed me back, but my shoe came off in her hand. I should have fastened it tighter.* . . . Maybe she should trust her own judgment. Maybe she knew exactly what Kareen was thinking.

When the comconsole chimed, close to the time of yesterday's call, Cordelia shot to answer it. A new broadcast from the capital, new evidence, something to break that circle of unreason? But the face that materialized over the vidplate was not Koudelka, but a stranger with Intelligence insignia on his collar.

"Lady Vorkosigan?" he began deferentially.

"Yes?"

"I'm Major Sircoj, duty-officer at the main portal. It's my job to screen everyone new reporting in, men who've left traitor-units and so on, and to collect any new intelligence they've brought with them. We had a man turn up half an hour ago who says he escaped the capital, who refuses to voluntarily debrief. We've confirmed his claim that he's had anti-interrogation conditioning—if we try to fast-penta him, it'll kill him. He keeps saying—actually, insisting—to speak with you. He could be an assassin."

Cordelia's heart pounded. She leaned into the holovid as if she might climb through it. "Did he bring anything with him?" she demanded breathlessly. "Like a canister, about half a meter high—lots of blinking lights, and big red letters on top that say This End Up? Looks mysterious as hell, guaranteed to send any security guard into fits—his name, Major!"

"He brought nothing but the clothes he's standing in. He's not in good shape. His name is Vaagen, Captain Vaagen."

"I'll be right there."

"No, milady! The man is practically raving. Could be dangerous. I can't let

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

you—''

She left him talking to an empty room. Droushnakovi had to break into a run to catch up with her. Cordelia made it to the main portal Security offices in less than seven minutes, and paused in the corridor to catch her breath. To catch her soul, that wanted to fly out of her mouth. Calm. Calm. Raving apparently cut no ice with Sircoj.

She lifted her chin and entered the office. ''Tell Major Sircoj that Lady Vorkosigan is here to see him,'' she told the clerk, who raised impressed brows and obediently bent to his comconsole.

Sircoj appeared in a few endless minutes—through *that* door, Cordelia mentally marked his route. ''I must see Captain Vaagen.''

''Milady, he could be dangerous,'' Sircoj began exactly where she'd cut him off before. ''He could be programmed in some unexpected way.''

Cordelia considered unexpectedly grabbing Sircoj by the throat and attempting to squeeze reason into him. Impractical. She took a deep breath. ''What will you let me do? Can I at least see him on vid?''

Sircoj looked thoughtful. ''That might be all right. A cross-check on our identification, and we can record. Very well.''

He took her into another room, and keyed up a monitor viewer. Her breath blew out with a small moan.

Vaagen was alone in a holding room, pacing from wall to wall. He wore green uniform trousers and a brown-stained white shirt. He was terribly changed from the trim and energetic scientist she'd last seen in his lab at ImpMil. Both his eyes were ringed with red-purple blotches, one lid swollen nearly shut; the slit glowed a frightening blood-scarlet. He moved bent over. Bathless, sleepless, swollen lips . . .

''You get a medtech for that man!'' Cordelia realized she'd yelled when Sircoj jumped.

''He's been triaged, his condition is not life-threatening. We can start treating him just as soon as he's security-cleared,'' said Sircoj doggedly.

''Then you put him on-line with me,'' Cordelia said through set teeth. ''Drou, go back to the office, call Aral. Tell him what's going on.''

Sircoj looked worried at this, but stuck valiantly to his procedures. More endless seconds, while someone went back to the prison area and took Vaagen to a comconsole.

His face came up over the plate at last; Cordelia could see her own face reflected in the passionate intensity in his. Connected at last.

''Vaagen! What happened?''

''Milady!'' His hands clenched, trembling, as he leaned on them toward the vid pick-up. ''The idiots, the morons, the ignorant, stupid—'' he sputtered into helpless obscenities, then caught his breath and began again, quickly, concisely, as if her image might be snatched away again at any moment.

''We thought we might be all right at first, after the first two days fighting trailed off. We hid the replicator at ImpMil, but nobody came. We lay low, and took turns sleeping in the lab. Then Henri managed to smuggle his wife out of town, and we both stayed. We tried to continue the treatments in secret.

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

Thought we might wait it out, wait till rescue. Things had to break, one way or another. . . .

"We'd almost stopped expecting them, but they came. Last—yesterday," he rubbed a hand through his hair as if seeking some connection between real-time and nightmare-time, where clocks ran crazy. "Vordarian's squad. Came looking for the replicator. We locked the lab, they broke in. Demanded it. We refused, refused to talk, they couldn't fast-penta either of us. So they beat us up. Beat him to *death,* like street scum, like he was nobody, all that intelligence, all that education, all that promise *wasted,* dropped by some mumbling moron swinging a gun butt. . . ." Tears were running down his face.

Cordelia stood white and stricken; bad, bad attack of defective *déjà vu.* She'd played the lab scene in her head already a thousand times, but she'd never seen Dr. Henri dead on the floor; nor Vaagen beaten senseless.

"Then they ripped into the lab. Everything, all the treatment records. All Henri's work on burns, gone. They didn't have to do that. All gone for nothing!" His voice cracked, hoarse with fury.

"Did they . . find the replicator? Dump it out?" She could see it; she had seen it over and over, spilling. . . .

"They found it, finally. But then they took it. And then let *me* go." He shook his head from side to side.

"Took it," she repeated stupidly. Why? What sense, to take the technology and not the techs? "And let you go. To run to us, I suppose. To give us the word."

"You have it, milady."

"Where, do you suppose? Where did they take it?"

Vorkosigan's voice spoke beside her. "The Imperial Residence, most likely. All the best hostages are being kept there. I'll put Intelligence right on it." He stood, feet planted, grey-faced. "It seems we're not the only side turning up the pressure."

CHAPTER FIFTEEN

Within two minutes of Vorkosigan's arrival at main portal Security, Captain Vaagen was flat on a float pallet and on his way to the infirmary, with the top trauma doctor on the base being paged for rendezvous. Cordelia reflected bitterly on the nature of chain of command; all truth and reason and urgent need were not enough, apparently, to lend causal power to one outside that chain.

Further interrogation of the scientist had to wait on his medical treatment. Vorkosigan used the time to put Illyan and his department on the new problem. Cordelia used the time to pace in circles in the infirmary's waiting area. Droushnakovi watched her in silent worry, not so foolish as to offer up reassurances they both knew to be empty.

At last the trauma man emerged from surgery to announce Vaagen conscious and oriented enough for a brief—he emphasized the brief—questioning. Aral came, trailing Koudelka and Illyan, and they all trooped in to find Vaagen in an infirmary bed, with his eye patched and an IV running fluids and meds.

Vaagen's hoarse and weary voice added a few horrific details, but nothing to change the word-picture he'd first

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

given Cordelia.

Illyan listened with steady attention. "Our people at the Residence confirm," he reported when Vaagen ran down, depressed whisper trailing to silence. "The replicator was apparently brought in yesterday, and has been placed in the most heavily-guarded wing, near Princess Kareen's quarters. Our loyalties don't know what it is, they think it's some kind of a device, maybe a bomb to take out the Residence and everyone in it in the final battle."

Vaagen snorted, coughed, and winced.

"Do they have anyone tending it?" Cordelia asked the question no one else had, so far. "A doctor, a medtech, anyone?"

Illyan frowned. "I don't know, milady. I can try to find out, but every extra communication endangers our people, up there."

"Mm."

"The treatment's interrupted anyway," Vaagen muttered. His hand fiddled with the edge of his sheet. "Bitched to hell."

"I realize you've lost your notes, but could you . . . reconstruct your work?" Cordelia asked diffidently. "If you got the replicator back, that is. Take up where you left off?"

"It wouldn't be where we left off, by the time we got it back. And it wasn't all in my head. Some of it was in Henri's."

Cordelia took a deep breath. "As I recall, these Escobaran portable replicators run on a two week service cycle. When did you last recharge the power, change the filters, and add nutrients?"

"Power cell's good for months," Vaagen corrected. "Filters are more of a problem. But the nutrient solution will be the first limiting factor it'll hit. At its hyped-up metabolic rate, the fetus would starve a couple of days before the system choked on its waste. Breakdown products might overload the filters pretty soon after lean-tissue metabolism began, though."

"And when did you and Henri last service the replicator?"

"The fourteenth."

"Less than six days left," Cordelia whispered, appalled.

"About . . . about that. What day is this?" Vaagen looked around in an uncharacteristic uncertainty that hurt Cordelia's heart to watch.

"The time limit applies only if it's not being properly taken care of," Aral put in. "The residence physician, Kareen and Gregor's man—wouldn't he realize something was needed?"

"Sir," Illyan said, "The princess' physician was reported killed in the first day's fighting at the Residence. Two cross-confirmations—I have to consider it certain."

"They could let Miles die out of sheer ignorance up there," Cordelia realized in dismay. "As well as on purpose." Even one of their own secret loyalists, under the heroic impression he was defusing a bomb, could be a menace to her child.

Vaagen twisted, in his sheets. Aral caught Cordelia's eye, and jerked his head toward the door. "Thank you, Captain Vaagen. You have done us extraordinary service. Beyond duty."

"Screw duty," Vaagen muttered. "Bitched to hell . . . damned ignorant goons . . . "

They withdrew, to leave Vaagen to

LICENSED TO AMZ CEC
ELECTRONIC REPRODUCTION PROHIBITED

his unrestful recovery. Vorkosigan dispatched Illyan to his multiplied duties.

Cordelia faced Aral. "Now what?"

His lips were a flat, hard line, his eyes half-absent with calculation, the same calculations she was running, Cordelia guessed, complicated by a thousand added factors she could only imagine. He said slowly, "Nothing's changed, really. From before."

"It is changed. Whatever the difference there is between being in hiding, and being a prisoner. But why did Vordarian wait till now for this capture? If he was ignorant of Miles's existence before this, who told him of it? Kareen, maybe, when she decided to cooperate?"

Droushnakovi looked sick at this suggestion.

Aral said, "Maybe Vordarian's playing with us. Maybe he was always keeping the replicator in reserve, till he most needed a new lever."

"Our son. In reserve," Cordelia corrected. She stared into those half-there grey eyes, willing *See me, Aral!* "We have to talk about this." She towed him down the corridor to the nearest private room, a doctors' conference chamber, and turned up the lights. Obediently, he seated himself at the table, Kou at his elbow, and waited for her. She sat down opposite him. *We've always sat on the same side, before. . . .* Drou stood behind her.

Aral watched her warily. "Yes, Cordelia?"

"What's going on in your head?" she demanded. "Where are we, in this?"

"I . . . regret. In hindsight. Regret not sending a raid earlier. The Residence is a far more difficult fortress to penetrate right now than the military hospital, dangerous as a raid on ImpMil would have been. And yet . . . I could not change that choice. When men on my own staff were asked to wait and sweat, I could not risk men and expend resources for my private benefit. Miles's . . . position, gave me the power to demand their loyalty in the face of Vordarian's pressure. They knew I asked no risk of them and theirs that I was unwilling to share myself."

"But now the situation's changed," Cordelia pointed out. "Now you aren't sharing the same risks. Their relatives have all the time there is. Miles has only six days, minus the time we spend arguing." She could feel that clock ticking, in her head.

He said nothing.

"Aral . . . in all our time here, what favor have I ever asked of you, of your official powers?"

A sad half-smile quirked across his lips, and vanished. His eyes were wholly on her, now. "Nothing," he whispered. They both sat tensely, leaning toward the other, his elbows planted and hands clasped near his chin, her hands out flat before her, controlled.

"I'm asking now."

"Now," he said after a long hesitation, "is an extremely delicate time, in the overall strategic situation. We are right now engaged in secret negotiations with two of Vordarian's top commanders to sell him out. The space forces are about to commit. We are on the verge of being able to shut Vordarian down without a major set battle."

Cordelia's thought was diverted just long enough to wonder how many of Vorkosigan's commanders were se-

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

cretly negotiating right now to sell *them* out. Time would tell. Time.

Vorkosigan continued, "If—*if* we bring this negotiation off as I wish, we will be in a position to rescue most of the hostages in one major surprise raid, from a direction Vordarian does not expect."

"I'm not asking for a big raid."

"No. But I'm telling you that a small raid, particularly if things went wrong, might seriously interfere with the success of the larger, later one."

"Might."

"Might." He tilted his head in concession to the uncertainty.

"Time?"

"About ten days."

"Not good enough."

"No. I will try to speed things up. But you understand—if I botch this chance, this timing, several thousand men could pay for my mistakes with their lives."

She understood clearly. "All right. Suppose we leave the armies of Barrayar out of this for the moment. Let me go. With maybe a liveried man or two, and pinpoint—downright hypodermic—secrecy. A totally private effort."

His hands slapped the table, and he sputtered, "No! God, Cordelia!"

"Do you doubt my competence?" she asked dangerously. *I sure do.* Now was not the moment to admit this, however. "Is that 'Dear Captain' just a pet name for a pet, or did you mean it?"

"I have seen you do extraordinary things—"

You've also seen me fall flat on my face, so?

"—but you are not expendable. God. That really would make me terminally crazy. To wait, not knowing . . ."

"You ask that of me. To wait, unknowing. You ask it every day."

"You are stronger than I. You are strong beyond reason."

"Flattering. Not convincing."

His thoughts circled hers; she could see it in his knife-keen eyes. "No. No haring off on your own. I forbid it, Cordelia. Flat, absolutely. Put it right out of your mind. I cannot risk you both."

"You do. In this."

His jaw clamped; his head lowered. Message received and understood. Koudelka, sitting worriedly beside him, glanced back and forth between the two of them in consternation. Cordelia could sense the pressure of Drou's hand, white-tight on the back of her chair.

Vorkosigan looked like something being ground between two great stones; she had no desire to see him smeared to powder. In a moment, he would demand her word to confine herself to Base, to dare no risk.

She opened her hand, curving up on the tabletop. "I would choose differently. But no one appointed me Regent of Barrayar."

The tension ran out of him with a sigh. "Insufficient imagination."

A common falling, among Barrayarans, my love.

Returning to Aral's quarters, Cordelia found Count Piotr in the corridor, just turning away from their door. He was quite changed from the exhausted wild man who'd left her on a mountain trail. Now he was dressed in the sort of quietly upper-class clothes favored by retired Vor lords and senior Imperial

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

ministers; neat trousers, polished half-boots, an elaborate tunic. Bothari loomed at his shoulder, once again costumed in his formal brown-and-silver livery. Bothari carried a thick coat folded over his arm, by which Cordelia deduced Piotr had just blown in from his diplomatic mission to some fellow District count to the wintery north of Vordarian's holdings. Vorkosigan's people certainly seemed to be able to move at will now, outside the heartlands held by Vordarian.

"Ah. Cordelia." Piotr gave her a formal, cautious nod, not reopening hostilities here. That was fine with Cordelia. She was not sure she had any will to fight left in her gnawed-out heart.

"Good day, sir. Was your trip a success?"

"Indeed it was. Where is Aral?"

"Gone to Sector Intelligence, I believe, to consult with Illyan about the most recent reports from Vorbarr Sultana."

"Ah? What's happening?"

"Captain Vaagen turned up at our door. He'd been beaten half-senseless, but he still somehow made it from the capital—it seems Vordarian finally woke up to the fact that he had another hostage. His squad looted Miles's replicator from ImpMil, and took it back to the Imperial Residence. I expect we'll hear more from him soon about it, but he's doubtless waited to give us the full pleasure of Captain Vaagen's tale, first."

Piotr threw back his head in a sharp, bitter laugh. "Now *there's* an empty threat."

Cordelia unclenched her jaw long enough to say, "What do you mean, sir?" She knew perfectly well what he meant, but she wanted to see him run to his limit. *All the way, damn you; spit it all out.*

His lips twitched, half frown, half smile. "I mean Vordarian inadvertently offers House Vorkosigan a service. I'm sure he doesn't realize it."

You wouldn't say that if Aral were standing here, old man. Did you set this up? God, she couldn't say that to him—"Did you set this up?" Cordelia demanded tightly.

Piotr's head jerked back. "I don't deal with traitors!"

"He's of your Old Vor party. Your true allegiance. You always said Aral was too damned progressive."

"You dare accuse me—!" His outrage edged into plain rage.

Her rage was shadowing her vision with red. "I know you are an attempted murderer, why not an attempted traitor, too? I can only hope your incompetence holds good."

His voice was breathy with fury. "Too far!"

"No, old man. Not nearly far enough."

Drou looked absolutely terrorized. Bothari's face was a stony blank. Piotr's hand twitched, as if he wanted to strike her. Bothari watched that hand, his eyes glittering oddly, shifting.

"While dumping that mutant out of its can is the best favor Vidal Vordarian could do me, I am hardly likely to let him know it. It will be far more amusing to watch him try to play a joker as if it were an ace, and then wonder what went wrong. Aral knows—I imagine he's relieved as hell, to have Vordarian do his job for him. Or have you be-

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

witched him into planning something spectacularly stupid?"

"Aral's doing nothing."

"Oh, good boy. I was wondering if you'd stolen his spine permanently. He is Barrayaran after all."

"So it seems," she said woodenly. She was shaking. Piotr was not in much better case.

"This is a side issue," he said, as much to himself as her, trying to regain his self-control. "I have major issues to pursue with the Lord Regent. Fare well, milady." He tilted his head in ironic effort, and turned away.

"Have a nice day," she snarled to his back, and flung herself through the door into Aral's quarters.

She paced for twenty minutes, back and forth, before she trusted herself enough to speak even to Drou, who had squeezed into a corner seat as if trying to make herself small.

"You don't really think Count Piotr is a traitor, do you, milady?" Droushnakovi asked, when Cordelia's steps finally slowed.

Cordelia shook her head. "No . . . no. I just wanted to hurt him back. This place is getting to me. Has gotten to me." Wearily, she sank into a seat and leaned her head back against the padding. After a silence she added, "Aral's right. I have no right to risk. No, that's not quite correct. I have no right to *failure*. And I don't trust myself any more. I don't know what's happened to my edge. Lost it in a strange land." *I can't remember. Can't remember how I did it.* She and Bothari were twins, right enough, two personalities separately but equally crippled by an overdose of Barrayar.

"Milady . . ." Droushnakovi plucked at her skirts, looking down into her lap. "I was in Imperial Residence Security for three years."

"Yes . . ." Her heart lurched, gulped. As an exercise in self-discipline, Cordelia closed her eyes and did not open them again. "Tell me about that, Drou."

"Negri trained me himself. Because I was Kareen's body servant, he always said I would be the last barrier between Kareen and Gregor and—and anything that was bad enough to get that far. He showed me everything about the Residence. He used to drill me about it. He showed me things I don't think he showed anybody else. We had five emergency escape routes worked out, in our disaster drills. Two of them were common Security procedure. One of them he showed only to a few top staffers like Illyan. The other two—I don't know that anybody knew about them but Negri and Emperor Ezar. And I'm thinking . . ." she moistened her lips, "a secret route out of something ought to be an equally secret route in. Don't you think?"

"Your reasoning interests me extremely, Drou. As Aral might say. Go on." Cordelia still did not open her eyes.

"That's about it. If I could somehow get to the Residence, I bet I could get in. If Vordarian's just taken over all the standard Security arrangements and beefed them up."

"And get back out?"

"Why not?"

Cordelia found she had to remember to breathe. "Who do you work for,

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

Drou?''

''Captain—'' she started to answer, but slowed self-consciously. ''Negri. But he's dead. Commander—Captain Illyan, now, I suppose.''

''Let me rephrase that.'' Cordelia opened her eyes at last. ''Who did you put your life on the line for?''

''Kareen. And Gregor, of course. They were kind of the same thing.''

''Still are. This mother bets.'' She caught Drou's blue gaze. ''And Kareen gave you to me.''

''To be my mentor. We thought you were a soldier.''

''Never. But that doesn't mean I never fought.'' Cordelia paused. ''What do you want to trade for, Drou? Your life on the line—in my hand—I shall not say oath-sworn, that's for those other idiots—for what?''

''Kareen,'' Droushnakovi answered steadily. ''I've watched them, here, gradually reclassifying her as expendable. Every day for three years, I put my life on the line because I believed that her life was important. Now they seem to think I should just switch off my loyalty, like some guard-machine. I want to—to at least try for Kareen. In exchange for that—whatever you will, milady.''

''Ah.'' Cordelia rubbed her lips. ''That seems . . . equitable. One expendable life for another. Kareen for Miles.'' She sank down in the chair in deep meditation.

First you see it. Then you do it. ''It's not enough,'' Cordelia shook her head at last. ''We need . . . someone who knows the city. Someone with muscle, for back-up. A weapons-man, a sleepless eye. I need a friend.'' The corners of her lips turned up in a very small smile. ''Closer than a brother.'' She rose and walked to the comconsole.

''You asked to see me, milady?'' said Sergeant Bothari.

''Yes. Please come in.''

Senior officers' quarters did not intimidate Bothari, but his brow furrowed nonetheless as Cordelia gestured him to a seat. She took Aral's usual spot across the low table from him. Drou sat again in the corner, watching in reserved silence.

Cordelia regarded Bothari, who regarded her in return. He looked all right physically, though his face was grooved with tension. She sensed, as with a third eye, frustrated energies coursing through his body; arcs of rage, nets of control, a tangled electric knot of dangerous sexuality under it all. Reverberating energies, building up and up without release, in desperate need of ordered action lest they break out wildly on their own. She blinked, and refocused on his less terrifying surface; a tired-looking ugly man in an elegant brown uniform.

To her surprise, Bothari began. ''Milady. Have you heard anything new about Elena?''

Wondering why I called you here? To her shame, she had almost forgotten Elena. ''Nothing new, I'm afraid. She is reportedly being kept along with Mistress Hysopi in that downtown hotel that Vordarian's Security commandeered when they ran out of cells, with a lot of other second and third tier hostages. She hasn't been moved to the Residence or anything.'' Elena was not, unlike Kareen, in the direct line of Cordelia's secret mission. If he asked, how much

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

dare she promise?

"I was sorry to hear about your son, milady."

"My mutant, as Piotr would say." She watched him; she could read his shoulders and spine and gut better than that blank beaky face.

"About Count Piotr," he said, and stopped. His hands hooked each other, between his knees, and flexed. "I had thought to speak to the Admiral. I hadn't thought to speak to you. I should have thought of you."

"Always." Now what?

"Man came up to me yesterday. In the gym. Not in uniform, no rank or name tag. He offered me Elena. Elena's life, if I would assassinate Count Piotr."

"How tempting," Cordelia choked, before she could stop herself. "What, uh, guarantees did he offer?"

"That question came to me, pretty shortly. There I would be, in deep shit, maybe executed, and who would care for a, a dead man's bastard then? I figured it for a cheat, just another cheat. I went back to look for him, been on the lookout, but I never spotted him since." He sighed. "It almost seems like a hallucination, now."

The expression on Drou's face was a study in the deepest unreassurance, but fortunately Bothari was turned away from her and did not notice. Cordelia shot her a small quelling frown.

"Have you been having hallucinations?" Cordelia asked.

"I don't think so. Just bad dreams. I try not to sleep."

"I . . . have a dilemma of my own," Cordelia said. "As you heard me tell Piotr."

"Yes, milady."

"Had you heard about the time limit?"

"Time limit?"

"If it's not serviced, the replicator will start to fail to support Miles in less than six days. Aral argues that Miles is in no more danger than any of his staffers' families. I disagree."

"Behind his back, I've heard some say otherwise."

"Ah?"

"They say it's a cheat. The Admiral's son is some sort of mutant; nonviable, while they risk whole children."

"I don't think he realizes . . . anyone says that."

"Who would repeat it to his face?"

"Very few. Maybe not even Illyan." Though Piotr probably wouldn't hesitate to pass it on, if he picked it up. "Dammit! No one, on either side, would hesitate to dump that replicator." She brooded, and began again. "Sergeant. Who do you work for?"

"I am oath-sworn armsman to Count Piotr," Bothari recited the obvious. He was watching her closely now, a weird smile tugging at one corner of his mouth.

"Let me rephrase that. I know the official penalties for an armsman going AWOL are fearsome. But suppose—"

"Milady." He held up a hand; she paused in mid-breath. "Do you remember, back on the front lawn at Vorkosigan Surleau when we were loading Negri's body into the lightflyer, when my Lord Regent told me to obey your Voice as his own?"

Cordelia's brows went up. "Yes . . . ?"

"He never countermanded that

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

order."

"Sergeant," she breathed at last, "I'd never have guessed you for a barracks-lawyer."

His smile grew a millimeter tighter. "Your voice is as the Voice of the Emperor himself. Technically."

"Is it, now?" she whispered in delight. Her nails dug into her palms.

He leaned forward, his hands now held rock-still between his knees. "So, milady. What were you saying?"

The motor pool staging bay was an echoing low vault, its shadows slashed by the lights from a glass-walled office. Cordelia stood waiting in the darkened lift-tube portal, Drou at her shoulder, and watched through the distant rectangle of glass as Bothari negotiated with the transport officer. General Vorkosigan's armsman was signing out a vehicle for his oath-lord. The passes and IDs Bothari had been issued apparently worked just fine. The motor pool man fed Bothari's cards to his computer, took Bothari's palm print on his sensorpad, and dispatched orders with snap and hustle.

Would this simple plan work? Cordelia wondered desperately. And if it didn't, what alternative had they? Their planned route sketched itself in her mind, red light-lines snaking over a map. Not north toward their goal, but due south first, by groundcar into the next loyal district. Ditch the distinctive government vehicle, take the monorail west to yet another district, then northwest to another; then due east into Count Vorinnis's neutral zone, focus of so much diplomatic attention from both sides. Piotr's comment echoed in her memory, "I swear, Aral, if Vorinnis doesn't quit trying to play both ends against the middle, you ought to hang him higher than Vordarian when this is over." Then into the capital district itself, then, somehow, into the sealed city. A daunting number of kilometers to cover. Three times the distance of the direct route. So much time. Her heart swung north like a compass needle.

The first and last districts would be the worst. Aral's forces could be almost more inimical to this excursion than Vordarian's. Her head spun with the cumulative impossibility of it all.

Step by step, she told herself firmly. One step at a time. Just get off Tanery Base; that, they could do. Divide the infinite future into five-minute blocks, and take them one by one.

There, the first five minutes down already, and a swift and shining general staff car appeared from underground storage. A small victory, in reward for a little patience and daring. What might great patience and daring yet bring?

Judiciously, Bothari inspected the vehicle, as if in doubt that it was quite fit for his master. The transport officer hovered anxiously, and seemed to deflate with relief when the great general's armsman, after running his hand over the canopy and frowning at some minute speck of dust, gave it a grudging acceptance. Bothari brought the vehicle around to the lift tube portal and parked it, neatly blocking the officer's view of the entering passengers.

Drou bent to pick up their satchel, packed with a very odd variety of clothing, including Bothari and Cordelia's mountain souvenirs, and their thin assortment of weapons. Bothari set the

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

polarization on the rear canopy to mirror-reflection, and raised it.

"Milady!" Lieutenant Koudelka's anxious voice called from the lift-tube entry behind them. "What are you doing?"

Cordelia's teeth closed on vile words. She converted her savage expression to a light, surprised smile, and turned. "Hello, Kou. What's up?"

He frowned, looking at her, at Droushnakovi, at the satchel. "I asked first." He was out of breath; he must have been chasing them down for some minutes, after not finding her in Aral's quarters. An ill-timed errand.

Cordelia kept her smile fixed, as her mind blinked on a vision of a Security team piling out of the lift tube to arrest her, or at least her plans. "We're . . . going into town."

His lips thinned in skepticism. "Oh? Does the Admiral know? Where's Illyan's outer-perimeter team, then?"

"Gone on ahead," said Cordelia blandly.

This vague plausibility actually raised a flicker of doubt in his eyes. Alas, only for a moment. "Now, wait just a bloody minute—"

"Lieutenant," Sergeant Bothari interrupted. "Take a look at this." He gestured toward the rear passenger compartment of the staff car.

Koudelka leaned to look. "What?" he said impatiently.

Cordelia winced as Bothari's open hand chopped down across the back of Koudelka's back, and winced again at the heavy *thud* of Koudelka's head hitting the far side of the compartment's interior after a powerful boost-assist to neck and belt by Bothari. His swordstick clattered to the pavement.

"In." Bothari's voice was a strained low growl, accompanied by a quick glance across the bay toward the glass-walled transport office.

Droushnakovi flung the satchel into the compartment and dove in after Koudelka, shoving his long loose limbs out of the way. Cordelia grabbed up the stick and piled in after her. Bothari stood back, saluted, closed the mirrored canopy, and entered the driver's compartment.

They started smoothly. Cordelia had to control irrational panic as Bothari stopped at the first check point. She could see and hear the guards so clearly, it was difficult to remember they saw only the reflections of their own hard eyes. But apparently General Piotr could indeed pass anywhere at will. How pleasant to be General Piotr. Though in these trying times, probably not even Piotr could have *entered* Tanery Base without that rear canopy being opened and scanned. The final gate crew that waved them out were busily engaged in just such an exhaustive inspection of a large incoming convoy of freight haulers. Their timing was just as Cordelia had planned and prayed.

Cordelia and Droushnakovi finally got the sprawling Koudelka straightened up between them. His first alarming flaccidity was passing off. He blinked and moaned. Koudelka's head, neck, and upper torso were of the few areas of his body not rewired; Cordelia trusted nothing inorganic was broken.

Droushnakovi's voice was taut with worry. "What'll we do with him?"

"We can't dump him out on the road,

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

he'd run back and give the word," said Cordelia. "Yet if we cinched him to a tree out of sight somewhere, there's a chance he might not be found. We'd better tie him up, he's coming around."

"I can handle him."

"He's had enough handling, I'm afraid."

Droushnakovi managed to immobilize Koudelka's hands with a twisted scarf from the satchel; she was quite good at clever knots.

"He might prove useful," mused Cordelia.

"He'll betray us," frowned Droushnakovi.

"Maybe not. Not once we're in enemy territory. Once the only way out is forward."

Koudelka's eyes stopped jerking, following some invisible starry blur, and came at last into focus. Both his pupils were still the same size, Cordelia was relieved to note.

"Milady—Cordelia," he croaked. His hands yanked futilely at the silky bonds. "This is crazy. You'll run right into Vordarian's forces. And then Vordarian will have two handles on the Admiral, instead of just one. And you and Bothari know where the Emperor is!"

"Was," corrected Cordelia. "A week ago. He's been moved since then, I'm sure. And Aral has demonstrated his capacity to resist Vordarian's leverage, I think. Don't underestimate him."

"Sergeant Bothari!" Koudelka leaned forward, appealing into the intercom. The front canopy was also silvered, now.

"Yes, Lieutenant?" Bothari's bass monotone returned.

"I order you to turn this vehicle around."

A slight pause. "I'm not in the Imperial Service any more, sir. Retired."

"Piotr didn't order this! You're Count Piotr's man."

A longer pause; a lower tone. "No. I am Lady Vorkosigan's dog."

"You're off your meds!"

How such could travel over a purely audio link Cordelia was not sure, but a canine grin hung in the air before them.

"Come on, Kou," Cordelia coaxed. "Back me. Come for luck. Come for life. Come for the adrenalin rush."

Droushnakovi leaned over, a sharp smile on her lips, to breathe in Koudelka's other ear, "Look at it this way, Kou. Who else is ever going to give you a chance at field combat?"

His eyes shifted, right and left, between his two captors. The pitch of the groundcar's power-whine rose, as they arrowed into the growing twilight. ■

CONCLUDED IN NEXT ISSUE

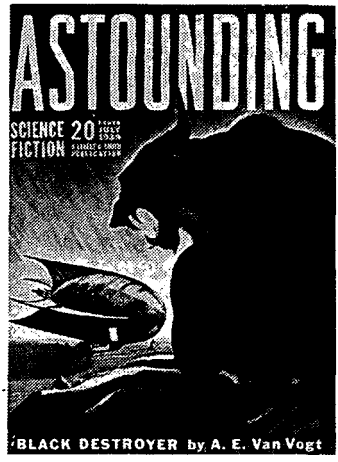
● Art has nothing to do with truth.

Wolfgang Borchert

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

A TREASURE FROM THE GOLDEN AGE OF SCIENCE FICTION!

A Hardbound Copy of the July 1939 Edition of ASTOUNDING!



Critics mark this issue as the first "great" issue edited by John W. Campbell, Jr. It contains the first published story, "Black Destroyer," by A.E. van Vogt and the first story by Isaac Asimov to be published in **ASTOUNDING.**

This hardbound facsimile of the July 1939 issue also contains an Epilogue in which A.E. van Vogt, Asimov, and Rocklynne comment on their own work, their feelings towards **ASTOUNDING**, and especially their relationships with John W. Campbell, Jr.

This classic collector's item is now only **$9.95** but act fast, supply is limited. Please send my 1939 **ASTOUNDING** to:

Name_____

Address_____

City_____ State_____ Zip_____

Send check or money order (No COD's) to: Analog, P.O. Box 40, Vernon, NJ 07462
Canadian or **Foreign** orders add **$5.00.** Allow 6-8 weeks for delivery.

M3BG-3

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

the reference library

By Tom Easton

Stations of the Tide, Michael Swanwick, Morrow, $18.95, 207 pp.
Carve the Sky, Alexander Jablokov, Morrow, $18.95, 287 pp.
Pacific Edge, Kim Stanley Robinson, TOR, $18.95, 327 pp.
Young Bleys, Gordon R. Dickson, TOR, $19.95, 456 pp.
Divergence, Charles Sheffield, Ballantine/Del Rey, $16.95, 284 pp.
The Khan's Persuasion, Cynthia Felice, Ace, $3.95, 284 pp.
Gnome Man's Land, Esther Friesner, Ace, $4.50, 235 pp.
The Gateway Trip, Frederik Pohl, Ballantine/Del Rey, $18.95, 256 pp.
Minotaur Maze, Robert Sheckley, Axolotl Press (Pulphouse Publishing, Box 1227, Eugene, OR 97440), $10 (paper), $35 (hard), $65 (leather), 110 pp.
Science Fiction Writers of America Handbook, Kristine Kathryn Rusch and Dean Wesley Smith, eds., Pulphouse (Box 1227, Eugene, OR 97440), $10, 248 pp.

Saying that there are differences between "literary" and "commercial" or "popular" fiction is not at all the same thing as saying that one is better than the other (although it is often taken thus).

What are the differences? On the level of commerce, "literary" fiction often does not perform as well. For this reason, even successful "literary" writers may need and seek subsidies from such sources as the National Endowment for the Arts, while successful "commercial" writers rake in the big advance and royalty checks and make TV and movie deals.

On the level of style and content, it does not seem unfair to say that "commercial" fiction tends to the direct, fast-moving, and action-oriented, with most of its meaning on the surface. "Literary" fiction may be more subtle, oriented toward character or mood instead of plot, with much of its meaning buried deep beneath the surface. For one, the

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

object of craft may be the scene; for finer details, anything will do. For the other, craft may not stop at the level of the scene but focus more finely, on paragraphs, sentences, even single words.

The basic reason for these differences may be very simple. If you want to make a living as a professional writer, writing full-time, you must write quickly enough to generate the income you need to house, feed, and clothe yourself and your family. If you are content to write on the side, letting a job as a college professor or real estate agent or stockbroker pay the bills, you can take more time over your writing, developing those finer details.

There are, of course, many exceptions to these tentative generalizations. You and I both know it. Yet stating them does serve a purpose: If I say that a book is "A *New York Times* best-seller" or "Soon to be a major motion picture," you immediately have some notion of what the reading experience will be like. Similarly, if I say that the "Acknowledgements" page of Michael Swanwick's **Stations of the Tide** says "This novel was written under a Challenge Grant from the M. C. Porter Endowment for the Arts," you immediately form a rather different expectation.

You would be quite right too, as long as you were careful not to jump to conclusions about whether you would enjoy reading it. Swanwick's main character is simply "the bureaucrat." One of a multitude of humans who occupy a distant solar system centuries or millennia hence, he works for a government bureau that strives to control advanced technology, keeping it out of the hands of—for instance—the residents of Miranda, a world that once pushed high tech rather too far. His mission is to track down one Gregorian and persuade him to surrender the forbidden technology he has supposedly stolen and taken to Miranda.

Miranda is a strange world. Its winters and summers each last a century. In summer, the Tidewater lowlands are exposed and humans live, farm, and build there. In winter, the icecaps melt and the ocean rages across the Tidewater. People move to the Piedmont. Local plants and animals, including the supposedly extinct sentient "haunts," change form from land-dwellers to sea-dwellers. And now Gregorian is advertising that he has the means to give people the ability to make equivalent changes for themselves.

Can he, really? Swanwick does not settle the matter of whether even the highest of this stellar system's high technology can do this trick until the very end. Nor does he tell us whether Gregorian is simply running a scam, stripping would-be customers of all their wealth. What he does tell us is that Gregorian cannot be found until and unless he wishes to be found; meanwhile he can reach out and touch the bureaucrat at any moment. He is a magician, a wizard, a master of deception and manipulation native to a culture that thrives on such things, cloned son of someone from the orbital culture (which calls its brand of deception "virtual reality" and achieves it with the aid of electronics instead of drugs), educated aloft and thus—true magician!—able to dwell in two realms at once.

Stations of the Tide is the tale of the bureaucrat's search, Gregorian's taunting ripostes, the marvels of a world on the verge of inundation. In its structure and preoccupation it debates the relative merits of restricted versus open access to technology. Its motto—if a novel can be said to have such a thing—is surely

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

Clarke's dictum that a sufficiently advanced technology must seem indistinguishable from magic.

You say it sounds rather "literary"? And you prefer "commercial"? Well, Swanwick tosses in a bit of the latter, too—there's the talking nanotech briefcase, the witchy sex, the bits of gore, and plenty of sense of wonder. So take a chance. Step across the boundary. You'll enjoy the book. I did.

In **Carve the Sky**, Alexander Jablokov would have it that centuries hence humanity remains restricted to the Solar System. History has proceeded in the normal way, producing wars, cultures, decadents, aristocrats, and cults. One of the cults, the Dispossessed Brethren of Christ, believed—or believes, if they still exist at the time of the story—that God is submerged in the universe and must be released by human effort, sculpted from rock and other substances. Naturally, the cult's adherents tend to be artists, sculptors, some of them among the greatest of human history.

There is also the Academia Sapientiae, headquartered in the Himalayas, dedicated to shaping human history. Which group inspired the title? Take your pick. Either fits, and perhaps Jablokov is hinting that one can sculpt God from intangible history as much as from more solid rock.

The tale begins when an Academia agent, Vanessa Karageorge, leaves her lover, an agent of the Technic Alliance beyond the Belt (she does not know he is a spy), to take delivery of a statuette. The pick-up goes awry. The statuette winds up in the hands of Lord Monboddo, the superficially effete Interrogator of Boston, and his aide and curator, Anton Lindgren. Analysis proves one of the materials in the artwork to be ngomite, a transuranic material apparently left behind by long-gone aliens; there is mention of a potential stardrive. The artist, Karl Ozaki, is long dead, but the statuette and other clues suggest that he still lives and works somewhere in space. Monboddo, Anton, Vanessa, Martians, Technics, all converge in the Belt, where the Brethren after all remain, plotting grand schemes with Ozaki's aid, and . . .

The hunt runs through a landscape of marvelous strangeness and artistic sensibility, in a style variously reminiscent of Vance and Wolfe and even Sucharitkul, to a bang-up ending that should please anyone with a taste for action. Recommended.

The Wild Shore. *The Gold Coast*. Two novels set in Orange County, California, one after military disaster, one after a crescendo of consumerist development, both saying, "If this goes on, just look at the mess we'll be in!"

Now Kim Stanley Robinson concludes his "Orange County" trilogy with **Pacific Edge**, in which he says something like, "But it doesn't have to go on. We *can* turn things around." The key, he says is banning big. Small is beautiful, especially when enabled by high-tech materials and information technology, and especially if a place is left for such things as power-sats. But do away with exploitative multinational corporations. Legislate ceilings (and floors) on personal income. As well, put military budgets and manufacturers in service to environmentalism.

In the end, you have an Orange County whose citizens each give their town a few hours of labor per week, doing such things as tearing up asphalt pavements for recovery of their constituent hydrocarbons. They ride bicycles everywhere, though rental cars are

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

available for long trips. Ocean freighters once more use sails. Houses tap solar energy, use composting toilets, and incorporate trees and gardens. And Kevin Claiborne, grandson of one of the major shapers of the new age, smitten by the lovely Ramona who has just split from Mayor Alfredo, must take his position on the town council, detect an apparent plot by Alfredo to force development and growth on the town, and unearth a deeper plot to defy the laws governing corporate size and personal income.

Intriguingly, Robinson periodically inserts into his narrative the ruminations of a writer—perhaps, you will think for a while, himself. Here he tells us what he is up to, not just in this book but in the entire trilogy: "Must redefine utopia . . . Utopia is the process of making a better world, the name for one path history can take, a dynamic, tumultuous, agonizing process, with no end. Struggle forever. Compare it to the present course of history. If you can." (p. 95)

The "bad guy" of human history, he shows us, is human self-interest. The same thing, of course, is essential to individual and social progress. Unrestrained, unenlightened, however, it leads to wars, overpopulation, and environmental disasters. On the other hand, "enlightened" people have a tendency to throw out the baby with the baby water: His characters are very physical, very outdoorsy, very California—they are bicyclers, swimmers, hikers; Kevin is a carpenter who bats a thousand at softball. By implication, they are talky animals who reject the life of the mind, "culture," and all its immense power and relevance. Only fat Oscar, fan of auto races, professional wrestler, municipal lawyer, reader of classics, mystic communer with goose and coyote, combines both physical and spiritual. Robinson makes the point explicit when Oscar takes Kevin to a performance of "Macbeth" in a tiny garage-theater.

How serious is Robinson when he says, "If someday the whole world reaches utopia, then that dream California will become a precursor, a sign of things to come, and my childhood is redeemed" (p. 300)? He loves the land of Orange County, California, the history, the people. He prays for its deliverance from militarism and consumerism into the hands of the Greens. Yet he also—consider Oscar—has his fingers crossed.

I think it's clear that I find what Robinson is saying very interesting. Yet I must admit that *Pacific Edge*—indeed, the whole trilogy, but especially this concluding volume—has a very didactic, even preachy tone. This makes it no less worth attending, for the sermon is an exceedingly important one and the problems that are its topic *must* be solved if we are to survive for long as civilized, humane beings. The preachiness does, however, count against the book's success as a story. You won't have to struggle to finish the book—it's warm, engaging, involving—but neither will you find it a pulse-pounding, thrill-a-minute page-turner.

So what are you waiting for? Go read it.

In *The Final Encyclopedia*, Gordon R. Dickson opposed hero Hal Mayne, representative of progress and personal liberation, with a villain, Bleys Ahrens, chief of the Others (hybrids of the separate genetic stocks of humanity), whose goal was that conservative aim, driven by fear of the new, of domination and retreat into the past. Now Dickson gives us **Young Bleys**, the tale of Bleys's origins—born to an Exotic mother who in-

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

advertently taught him to be cynically manipulative; fostered to the Friendly (religiously oriented) world of Association; taken in hand by his elder brother Dahno, a persuasive giant who seems to have most of Association's government in his pocket; forced by his past to seek stability, even stasis; and gifted well beyond the norm with intelligence and competence. Dickson quite succeeds in his intent of making Bleys into a sympathetic character.

Unfortunately, few readers may stay with the book long enough to sympathize, for it plods far more than we are used to seeing from Dickson. As bad, the book is also marred by occasional inconsistencies, as when Dickson notes that Bleys asked Dahno for funds so that his "uncle" can buy a used tractor and later stresses that Bleys has never seen Dahno handle money.

Not recommended.

Charles Sheffield's **Divergence** is the sequel to his *Summertide*, Book Two of "The Heritage Universe." Humans have gone to the stars, there to find other sentients and a number of enigmatic structures, artifacts of the Builders who vanished a million years or so ago. There is also the memory of the Zardalu land-squids, abhorrent, ruthless, once lords over thousands of worlds, exterminated in the Great Rising.

In *Summertide*, Sheffield showed us the two worlds of Quake and Opal, linked by a Builder space elevator. As a rare orbital conjunction threatened to shatter both worlds, a number of sentients arrived. Darya Lang, scholar, seeking new evidence of the Builders. Hans Rebka, troubleshooter. Julius Graves, member of the governing Council. Louis Nenda and the Cecropian Atvar H'sial, unscrupulous hunters of Builder loot. J'merlia and Kallik, Louis's and Atvar's alien slaves. The cataclysm arrived; a new Builder artifact erupted from Quake, seized the two looters in their ship, and headed for the gas-giant Gargantua; and Lang, Rebka, and the slaves pursued.

As *Divergence* opens, E. C. Tally, a computer fitted into a body of vat-grown flesh, is being sent to Opal to find out what happened. When he arrives, he, Graves, and local Birdie Kelly are off to Gargantua to join the others on the threshold of a Builder transportation system and journey 30,000 light-years to a space station that dwarfs worlds. There they discover that the Builders have carefully stored a few Zardalu until at least one human and one Cecropian are on hand. Their intent is to let the three species fight it out, the winner to join the Builders as something like equal partners in a cosmic quest.

I found *Summertide* much more satisfying. This one offers marvels enough, but after its predecessor it strikes me as having too little that is really fresh, not enough suspense, too much cliché of character and plot. It's a middle volume, a placeholder, a blank-filler. You'll want to read it anyway, at least if the next volume (or volumes) wraps up the series as well as it began, but you'll probably prefer to wait for the paperback.

Cynthia Felice has done some fairly nice work in the past, both alone and with Connie Willis. Unfortunately, her latest novel, **The Khan's Persuasion**, is eminently forgettable, largely because it commits the cardinal sin of science fiction: it does not convince.

The scene is the world of Cestry Prime, to which human exploiters have just come to cut magtrees (rich in magnesium) for export. Here, of course, lies the first boggler, for there is no apparent

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

justification for interstellar lumber shipments. The second boggle lies with the natives, which look—and may in fact be—human; the decision depends upon linguistic analysis by suitable experts, such as Sindon Liang and her supervisor and lover, David Quarrels. The boggle is that these experts look only for Indo-European linkages; never mind the possibilities of African, Asian, South American, or Australian linguistic roots. A third boggle is the fact that a simple blood test should settle the question even more promptly, yet no one checks a tissue sample until much, much later, after the set-up ignorance has done its job of provoking conflict.

Want a fourth boggle? Felice's gimmick is that the locals have the talent of "persuasion," meaning that by little more than laying on of hands, they can carve rock, lock hands unremovably onto tree branches or each other (a pretty good substitute for handcuffs), coax gold out of rock, turn rock into glass, and even give women orgasms such as they have never known before. Naturally enough, the local males look pretty good to the human females and it isn't long before Sindon, miffed at David, goes off with Rukmani Khan, the local male leader. In due time, she lets the Khan have his way with her and is suitably thrilled. She then runs afoul of the Khan's jealous wife, leader of the locals' less aggressive faction, and must be rescued by the Khan from the altar of sacrifice. When she returns to the humans to give birth to her daughter, David assumes the child is the Khan's and turns sour for the next sixteen years. Only then does anything happen to resolve the various contretemps.

Is it as much an idiot plot as it sounds? Perhaps not, for Felice *is* saying something worth saying about people of both sexes who think with their glands. Yet I did find it a struggle to get past the idiocies. I suspect the tale would have worked much better if Felice had played it for laughs.

You'll find an excellent example of "playing for laughs" in Esther Friesner's latest, **Gnome Man's Land**. It's a fantasy based on the idea that when the modern age dawned, humans walled the things of faery away in the "Leeside." Now, for some reason, a tiny hole has appeared in the wall, and small things—lares and penates; brownies, tomtes, and other household sprites; banshees; and so on—are coming through. The sprites wish only to find and serve someone of the proper ethnic stock, in return for a dish of milk. Of course, America being the melting pot it is, most people attract several of the sprites, which can lead to territorial wars of quite the Laurel-and-Hardy sort.

The tale begins when a banshee arrives to announce the imminent death of Tim Desmond. This is her function, after all. But Tim is just a Brooklyn high schooler. He isn't *ready* for this, nor for the banshee's amorous nature. Nor for his ability to see the Chinese ancestor of his heart throb, T'ing Hau Kaplan (adopted; of course). Nor for being appointed Dread and Puissant Champion of the Fey with the task of somehow integrating the fairy folk into modern life and thus preventing a new banishment.

Does he rise to the occasion? Of course. After all, he's an Irish hero of heroic stock, even if he is a mite confused about just what is going on.

Is the tale any more believable than Felice's? Of course not, but Friesner keeps you laughing too hard to notice, even while she slips you a somewhat more subtly pointed message. She lik-

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

ens human children to the fairy folk in size, need for trust and care and faithfulness, and even tantrums. Then, just to make her point quite clear, she brings on stage a child molestor who has been terrorizing Tim's neighborhood.

By the end, things are looking pretty optimistic. Tim has even inherited the mantle of a true hero. And the hole in the wall has enlarged just enough to admit the monsters of the Fey. The sequel, *Harpy High*, could be a doozer.

Frederik Pohl made a pretty fair impression with his Heechee stories. "Great stuff!" cried the readers, with an echo from his editors. "Give us more!" And he did. *Gateway* was followed by *Beyond the Blue Event Horizon* was followed by *Heechee Rendezvous* was followed by *The Annals of the Heechee*. And do pardon me if I sound a bit snide. I enjoyed them right along with the rest of you.

Did I perhaps feel, just a little, that he was overdoing it? Drawing the tale out a bit too long? I don't recall saying so out loud. But now here's **The Gateway Trip: Tales and Vignettes of the Heechee**. It's illustrated by Frank Kelly Freas (he of too many *Analog* covers and interiors to count). Unfortunately, it holds only one "tale," the reprinted novella "The Merchants of Venus," which very nicely displays life on Venus in the early days, when people are scrambling for whatever artifacts the long-gone aliens left in their burrows. Only later do humans find the Heechee parking garage full of abandoned ships and begin exploring the galaxy and figuring out Heechee technology.

The rest of the book, the "vignettes," reads like a hatful of minimally fleshed out notes on the background of the other books, or notes for stories he never got around to writing. It's interesting but not very satisfying unless, perhaps, you are a Heechee addict who just has to have another fix.

That is, it feels like Pohl is riding his own coattails here. That's a bit of remarkably awkward, painful contortionism that seems to be forced upon famous writers as the only way to make it through some of the hoops the marketers hold up before them.

The last time I reviewed anything by Robert Sheckley, I was exceedingly critical. He had lost it, I thought. And apparently he had, for the last lines of his new novella, **Minotaur Maze**, are in part: "the author . . . a ghostly figure of unbelievable beauty and intelligence, trying desperately, despite his many personal problems, to put things together again."

Whether you like Sheckley's work or not, that is enough to arouse your sympathy. Therefore, let us consider *Minotaur Maze*, which for all its brevity cannot easily be nutshelled. The hero is the mythical Theseus, he who slew the Minotaur in that maze built by Daedalus. Sheckley points out that myth tells numerous mutually contradictory tales of this hero (and others), presents the maze as a supernatural construct that encompasses all of Earth and time, and lets Theseus and Minotaur wander through a series of anachronistically cockeyed vignettes. There's a unifying thread in Theseus's mission, but that thread gets so tangled that one can only say that here we have a work either of grand genius or of utmost madness (assuming we could tell the difference). Whatever your verdict, you will have to agree that Sheckley is quite intriguing, mordant, witty, and provocative enough to take a bow.

The last time anyone saw a *SFWA*

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

Handbook was 1976. It was 147 pages, typeset with a typewriter, for SFWA members only, and it looked rather amateurish. Since then, numerous new members of the Science Fiction Writers of America have wished for copies of the handbook, more have called for a new edition, and the organization has repeatedly muttered something about Real Soon Now.

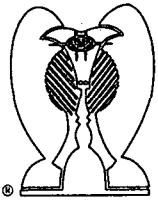
Happily, Real Soon seems to be Now indeed, and not for members only. The new **Science Fiction Writers of America Handbook**, edited by Kristine Kathryn Rusch and Dean Wesley Smith, is now available to the general public. It's just under 250 pages long, it's quite a professionally published package, and it costs a sawbuck a copy. The profits go to SFWA.

What do you get if you buy it? It *won't* teach you how to write. It *will* teach you an enormous amount about the business of being a writer with thorough, useful discussions of copyright law, contracts, agents, money, promotion, book packagers, electronic publishing, collaborations, series, and more. There is even a section on the SFWA bylaws, with descriptions of SFWA officers and committees. Contributors include the editors, Frederick Pohl, Damon Knight, Dean Lambe, Ellen M. Kozak, Richard Curtis, John Dalmas, Nina Kiriki Hoffman, T. Jackson King, Kevin J. Anderson, Jennifer Roberson, Betsy Mitchell, Susan Shwartz, Edward Bryant, D. Alexander Smith, Greg Bear, Jerry Oltion, Larry Niven, Orson Scott Card, Charles de Lint, and John Morressy, each and every one of whom knows whereof he or she speaks, sometimes from bitter experience. And if some of the pieces are reprinted from elsewhere, at least here you get them all together. ■

ChiconV®

The 49th World Science Fiction Convention

Hal Clement
(Author Guest of Honor)
Martin Harry Greenberg
(Editor Guest of Honor)
Richard Powers
(Artist Guest of Honor)
Jon & Joni Stopa
(Fan Guests of Honor)
Marta Randall
(Toastmaster)



29 Aug. – 2 Sep. 1991 Hyatt Regency Chicago

Chicon V will include panels and workshops in the areas of academics, fandom, children's activities, cities, literature, science, arts, desktop publishing and more. We will also have readings and autograph sessions, a masquerade ball and other dances, a gigantic dealers room where you will be able to find anything related to science fiction and fantasy, an art show, and auction, a print shop, a con suite and other parties, video & film presentations, gaming, filking, the Hugo Awards ceremonies, exhibits dealing with the history of fanzines and Worldcons, a hologram exhibit, and live theater. Please come, join us, and mingle with others who love science fiction as much as you do.

To Join, Write Us At: Chicon V Registration
PO Box 218121 Upper Arlington, OH
43221-8121

Rates for Attending memberships:

$125	until	**15 Jul '91**
$150		**at the door**

Supporting memberships $30 (not available after 15 July '91)

Child's memberships $75 (not available after 15 July '91)

A child is any person born after 28 August 1980. Children's Memberships will include the use of Chicon V child-care services.

Please include your name, address, phone, and the name you wish to appear on your badge for each membership.

All membership fees are quoted in US dollars; please make checks payable to "Chicon V". All checks must be drawn on US or Canadian banks; we can also accept Postal Money Orders as long as they are payable in US currency.

Hotel: Room rates for Chicon V will be **$70** per night single/double, **$90** triple and **$110** quad. RESERVATION FORMS ARE AVAILABLE ON REQUEST FROM THE CHICON V PO BOX. Please obtain a reservation form to ensure that you are properly booked with the convention.

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

brass tacks

Dear Stan,

I want to let you know how much I appreciate *Analog* and the great feast of thought-provoking scenarios that it has provided me over the last 12 years. I've journeyed to places and done things that I'd never have had the opportunity for anywhere else.

But what prompts the expression of my appreciation is a need to express disappointment in some shortsighted comments I encountered in your last editorial. Possibly you've already had reason to regret the poorly thought-out opinions you expressed stating that large families are a threat to the environment. That you are in an influential position for bending writers' minds toward a theme makes the error more profound.

While, obviously, there are some facts and trends that would lead a person to that outlook, it is a pessimistic and shortsighted mind that lets such an impression stay—unmodified. *People* are the foundation and source of all good things to happen in the world. Without them, all that wonderful environment would practically not exist, because without a perceiving center, there are no surroundings. These surroundings can be improved or made worse by people, but it takes people to do it. I enjoy Disneyland much more than the Mohave Desert because *people* have made it more inviting and convenient; and when push comes to shove, the same can be said of the entire planet.

In other words, it's not the number of people, but the quality of people that affect the environment. *Your* only concern should be that if we don't teach each other to be concerned for the other guy, we'll try to improve our surroundings at his expense environmentally as well as otherwise. So it's a matter of education, not family "planning."

Aside from high ideals your point

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

fails on even a practical level. If you and I (being "enlightened") limit our families while those in the third world (without such noble ideals) continue to proliferate unchecked, for whom will you and I be "preserving" the environment? Certainly not *our* children. It will be for the masses from more crowded countries who will gladly take over our underpopulated paradise (peacefully or not) and enjoy whatever questionable "environment" that we think we've preserved.

To reiterate; the correct answer to environmental concerns is that family size is of no consequence. The environment can be preserved through education and good management, but lost through shortsighted selfishness to those who do not care as much (because *we* have no children who've been taught to care). People are a resource, not some consumer black hole gobbling up the environment. Your environment is what you make of it, not what will be consumed when lots of people are around. The selfish will only make lots of grief for themselves, because the populace bulk will rule one way or another!

BRYAN ALLRED

Provo, UT

I like Disneyland, too, for a few hours every few years; but I certainly can't say that I categorically like it better than the Mojave desert (perhaps because I see things in the latter that you don't, or perhaps just because we don't like the same kinds of things).

I flatly disagree that "People are the foundation and source of all good things to happen in the world." Certainly they're the foundation and source of some *of them, but I've never seen a work of man that I could judge superior to a world that includes* all *the works of man plus a vast amount more.*

And "family size is of no consequence" seems completely indefensible. I did not suggest, by the way, that "we" should limit our families while others "proliferate unchecked"; in fact, I explicitly indicated otherwise (and do so even more explicitly in at least one later editorial).

Dear Mr. Schmidt,

My congratulations for having the courage to go public on the controversial and emotional subject of human overpopulation and its implications for the environment. Given what I know we struggle with here in Alabama, I am reasonably sure that all the mail you have received about that editorial has not been loaded with kudos, especially regarding the matter of Choice.

The subject of much writing I have seen in *Analog*, and other publications, is the shortsightedness of the human race where matters of resources are concerned. The edict to "Be fruitful and multiply" has, like so many other exploitive attitudes, been carried out beyond all reason. I saw a cartoon wherein Mother Earth was being congratulated for bearing her five billionth child. To the question "What do you think the child will be when it grows up?" she replied "Crowded and hungry." Your reminder that humans' desire for control of, and dominion over, all the planet has compromised our custodial abilities was timely and hopefully well heard.

Choosing how a pregnancy should end has always been the province of those who must deal with it firsthand. Women. They, as the creative and nurturing beings in our race, are truly the keepers of our future and are the final authority on matters of population size. That a patriarchal society, notorious for its abuses of the sacred Earth, should endeavor to usurp women's ability to make the most powerful decisions about

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

child bearing is an outrage beyond reckoning. I hope your editorial has stirred and educated us all that indeed *it doesn't matter how well we conserve and protect if there isn't enough to go around.*

JOHN WADE

Huntsville, AL

Dear Dr. Schmidt:

Having been a reader of yours for a *loonng* time, I don't for one moment believe that you omitted a role of religion in overpopulation out of a reluctance to tread on toes. I wonder, then, why you did in the Dec. 1990 editorial.

From the first "go forth and multiply" right up to the present day, religious leaders have been telling us it is our right, no, our duty, to clutter up the Earth with as many little *Homo sapiens* (?) as we can produce. In an agrarian society with a high infant mortality rate, that made sense. Families with no tractors, or even horses, needed the hands to produce the crops

In their blind faith, religious folk still believe that God will punish them for using any means to limit our population. Wouldn't you think they'd realize that He (or the simple laws of nature) is already punishing us for overcrowding the planet?

A little closer to home, my older sister, an agnostic, told me that her eldest daughter was marrying a Catholic, had taken instruction, and was converting. Using the license one assumes with close relatives, I asked if this meant unlimited children. Imagine my surprise when my sister, a lady I have always respected as intelligent, told me that it is the duty of people with high IQs, college educations, and high incomes to have many children. After all, the less intelligent people are going to keep right on overpopulating, and how else can we protect ourselves?

Is that scary?

Keep up the good work, making exercise of the gray cells fun.

DIANE SILVER

Arleta, CA

Dear Dr. Schmidt:

Although I have been a loyal reader for 50 plus years and a subscriber for close to 50 years, this is my first letter to the Editor. Obviously I enjoy *Analog* and science fiction, and I thank you for the job you are doing. Ben Bova's article in the *Wall Street Journal* made me realize that a lifetime of reading science fiction has made me a better engineer and a better citizen because I was ready to accept the future with all its wonders. . . .

Now I have to comment on your editorial regarding the population problem. Sure it's a problem; but where is your faith in science, in engineering and in the future? I always thought that the spirit of science fiction was that we, mankind, could find solutions to our problems. We know that nuclear can solve our energy problems, first fission and then for a long time fusion. I recently heard a paper on fusion wherein it was mentioned that the top 1½ inches of Lake Erie contained as much energy as all the fossil fuel in the world. By the time that is developed we should be moving into space in a significant way and this will provide some relief to the population pressure.

The social scientists have already observed that once a society becomes affluent, the pressures to have large families not only reduces; but becomes negative. Unlimited energy and bountiful food supplies, together with all the other benefits that a free society is capable of providing, could solve the population problem much quicker than anything else. What I am saying is that in

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

the world of the "possible" that we look at in science fiction it doesn't have to be a problem. *Analog* should be looking at solutions, there are plenty of Sierra Club doomsayer types spending their time looking at "problems." Remember the old adage "one man's problem is another man's or woman's opportunity."

Come on, Stan, turn your eyes to the stars.

NEVILLE S. LONG

Orinder, CA

They've been turned for a long time—but the first step toward finding a solution is to understand the problem! And that includes as much understanding as possible of what you can expect to do in a given time frame. Yes, possible solutions have often turned out to exceed short-sighted estimates—but it's not wise to count *on things you can't be sure you'll ever have.*

Dear Dr. Schmidt:

I found Dr. Forward's concept of "Polesitters" or "Statites" (as described in the December 1990 issue of *Analog*) to be fascinating. I had to wonder, though, whether a solar sail was the best way for a "statite" to get the thrust it needs to stay properly positioned. Solar navigation places a number of inconvenient limitations on the technique. And solar sails are unwieldy. It takes acres of sail to generate any useful thrust.

The only real advantage of a solar sail is that it requires no on-board power or reaction mass. In theory a solar-driven spacecraft can get a free ride forever. But forever is considerably longer than a communication satellite can last. Eventually circuits fail. Communication satellites are designed to last about a decade.

I wondered if another source of thrust—an ion rocket—could do the same job with less fuss. I have spent an evening toying with the concept and throwing around some numbers. I believe it will work.

First I assumed that the spacecraft would have to hold enough reaction mass to last for 10 years. I worked on the assumption that the weight of the spacecraft could be about ⅓ reaction mass. For every 1,000 kilograms of spacecraft that would be about 333 kilograms of reaction mass. If parceled out at a miserly milligram per second, that would last about 10½ years. (I picked on hydrogen as my reaction mass. Get rid of the electron and all you have left is a proton—charge one, mass one, couldn't be simpler.)

If the ion-rocket "statite" is positioned at 480,000 miles above the Earth (about 120 Earth radii) its weight is only 70 millionths of what it would be on the Earth's surface. One thousand kilograms would weigh 70 grams. That one milligram per second of reaction mass would have to be ejected at 680,000 meters per second (about 1.5 million miles per hour) to counter the weight of the spacecraft, and keep it from falling.

For ions, speeds like these are a yawn. Our ions would have a measly 2.4 electron-volts of energy each. But the number of particles would be immense—602 billion billion of 'em. To keep the energy ejected with these guys reasonable, I had to keep their speed low. Unfortunately, while the thrust of the particles is directly related to their speed, their energy goes up as the square.

If the ion-rocket were 100% efficient it would require about 233 watts of power. You can buy more powerful light bulbs at the hardware store. Even a woefully inefficient ion-rocket wouldn't require more than a modest size solar

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

panel to keep it going.

Unfortunately, this kind of statite is amazingly sensitive to altitude. The power required to keep it aloft varies as the *fourth power* of its distance above the Earth. Halve its altitude and the power you need to keep it aloft goes up *sixteen* times. At normal geosynchronous altitudes you need megawatts of power, simply because you can't use more reaction mass, you've got to pile on that expensive speed. Any practical system is going to have to stay 'way out there, and the signal transmission delay is going to be significant.

But if someone asked me to hang a communications statite above the North Pole, that's how I'd do it.

EDWARD A. BIANCHI, P.E.

Hershey, PA

The author replies. . . .

Dear Editor:

Mr. Bianci is correct. An electric ion rocket would suffice to support a spacecraft in a stationary position over the north pole—for a time. The idea has been around for some time—I even tried to get the Hughes Electric Propulsion Department to look into it—but it has never been published. Why doesn't he clean up his equations, throw in a few words and drawings, and send it to the AIAA *Journal of Spacecraft and Rockets* for publication?

ROBERT L. FORWARD, PH.D

Dear Dr. Schmidt

Unfortunately, Dr. Robert Forward's Statites (Dec. 1990) would not work in the way he has described them. No statite orbits can stay above the plane of the ecliptic.

Two forces operate on the statite: Gravity (from both the Earth and the Sun, but mostly from Earth) which acts on the whole system and light pressure which acts only on the sail. If gravity and light pressure are not aligned, then the system is under torque and will begin to spin. The vector sum of gravity and light pressure must total the centripetal force needed to keep the object in its orbit.

The vector sum of two aligned forces must be aligned with either one of them. Thus, the centripetal force has the same direction, though not the same magnitude, as the force of gravity. The centripetal force pulls any statite above the plane of the ecliptic toward the Earth and the Sun, both in that plane. Any statite orbit must cut (or lie in) the plane of the ecliptic.

By quite similar reasoning, no statite can continually lead or continually follow the Earth in its orbit. The only "constant" statite orbits are ones on the line passing through the Earth and the Sun. Other statite orbits appear (from the rotating frame of reference) to circle that line.

A lesser, but still vexing problem is that Forward draws the sails flat. Solar sails must be so thin that any force working to crumple them will succeed. The system will only work with the sails a segment of a sphere with the payload just beyond the center of the sphere. For a given area of light interception, the greater the arc the more massive the sail, the smaller the arc the longer and more massive the lines.

FRANK PALMER

Chicago, IL

The author replies. . . .

Dear Editor:

Mr. Palmer is applying his intuitive knowledge about orbiting spacecraft to the statite concept and is being led to erroneous conclusions. The basic concept behind the operation of any version of a statite is that the light pressure force on the sail of the statite is *greater* than the gravitational attractive force of ei-

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

ther the Sun or the Earth. Thus, the statite is *not in orbit*. Its motion is determined primarily by the choice of the direction of the light pressure force, *not* by the pull of gravity, which is what determines orbital mechanics.

Using light pressure force a sail can hover over the Sun, travel in straight lines rather than ellipses, and even stop dead in space and let the Sun and Earth leave it behind. All of this has been known for many years to those in the solar sail business. In my article, based on my technical paper*, I show that I can make a statite hover over the Earth, at commercially interesting places. I have sent a copy of my paper to Mr. Palmer. Once he has had a chance to see the detailed force diagrams and the equations, he will better understand how a statite can work—as advertised.

By the way, I am still looking for investors.

ROBERT L. FORWARD, PH.D.

*"The Statite: A Spacecraft That Does Not Orbit." To be published in *J. Spacecraft*.

Dear Dr. Schmidt:

Your December Brass Tacks has a letter from Neal J. Murray complaining of a subscriptions label that, unlike yours, damages the cover art. Chilling such magazines in the freezer for an hour or so usually unsticks such labels, or at least frees them enough to come off without damaging the cover.

RICHARD MONTGOMERY

Valdosta, GA ■

SCIENCE FICTION
analog
SCIENCE FACT

congratulates the winners of the 1990 Nebula Awards

given by the Science Fiction Writers of America

Best Novel
Tehanu: The Last Book of Earthsea
by Ursula K. Le Guin

Best Novella
"The Hemingway Hoax"
by Joe Haldeman
(*IAsfm*, April 1990)

Best Novelette
"Tower of Babylon"
by Ted Chiang

Best Short Story
"Bears Discover Fire"
by Terry Bisson
(*IAsfm*, August 1990)

Grand Master
Lester Del Rey

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

Classified Marketplace

ANALOG/ISAAC ASIMOV combination CLASSIFIED AD rate is $6.50 per word—payable in advance—($97.50 minimum). Capitalized words 40¢ per word additional. To be included in the next issue please send order and remittance to I. M. Bozoki, Classified Ad Director, DAVIS PUBLICATIONS, INC., 380 Lexington Ave., New York, N.Y. 10017.

ADDITIONAL INCOME

GET PAID FOR READING BOOKS! $100 per book. Write: Calco Publishing (Dept. C-107), 500 South Broad, Meriden, CT 06450.

BOOKS & PERIODICALS

FREE CATALOGS of Science Fiction pulps, digests, paperbacks, hardcovers. Collections also purchased. Bowman, Box 167, Carmel, IN 46032.

100,000 science fiction and mystery paperbacks, magazines, hardcovers. Free catalogs! Pandora's, Box Z-54, Neche, ND 58265.

In The Future . . .

YOUR

Classified/Display

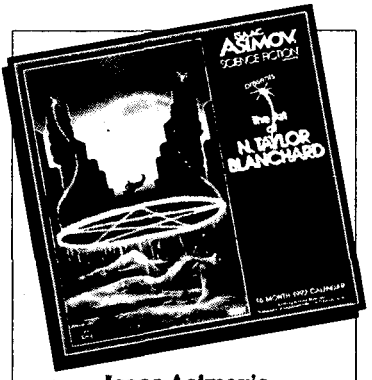
AD CAN BE PLACED HERE

For details:

SF CLASSIFIED
380 Lexington Ave.
New York, NY 10017
(212) 856-6338

LOOKING for a publisher? Learn how you can have your book published, promoted, distributed. Send for free booklet. HP-5, Vantage Press, 516 W. 34th St., New York, NY 10001.

CALENDARS



Isaac Asimov's Science Fiction Magazine Presents The Art of N.Taylor Blanchard 1992 Calendar

Order this 1992 calendar by sending a check or money order (no cash) to:

Davis Publications
Calendars
380 Lexington Ave.
NY, NY 10168-0035

In the US, please include price of calendar **$9.95** (*NYC residents please add 8¼% sales tax*) plus **$2.75** for shipping and handling for the first calendar, each additional calendar add **$.50**.

In Canada, remit US dollars, include the price of the calendar plus **$4.00** for shipping and handling for the first calendar, each additional calendar **$1.75**.

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

CATALOGS & DIRECTORIES

IF You Like Dragons, Wizards, and Fairies; send for our catalogue: The Silver Dragon, 5600 Post Road, East Greenwich, RI 02818. Dept. A.

CLOSEOUT MERCHANDISE

FIRST QUALITY CLOSEOUTS! Pants, shirts, socks, blouses, jeans—much more. Sold by the case. For resale only. Price list $1.00. Beal Textiles, Lincolnton, NC 28092.

DRAGON CATALOGS

FANTASTIC variety of decorative, useful, and wearable dragon items. Full-color catalog $2.00. Dancing Dragon - ANO, 5670 West End #4, Arcata, CA 95521.

EDUCATION & INSTRUCTION

WITCHCRAFT Occult Miracle Power Secrets. Gavin and Yvonne Frost. Now accepting students. 1502-AN, Newbern, NC 28563.

INVENTIONS WANTED

PROTECT, PATENT AND DEVELOP, Your invention rights before sale. Registered Patent Agent and Licensed Professional Engineer. Send for FREE PATENT INFORMATION Every Inventor Should Have. Richard L. Miller, 12 Parkside Drive, Suite-I, Dix Hills, NY 11746-4879. (516) 499-4343.

SONGWRITERS

$1,200.00 CASH PRIZE. Poems Wanted For Songs. Radio-TV Promotions - Recordings - Publishing. Broadway Music Productions, Box 7438-DA, Sarasota, FL 34278.

POEMS, Songs, Ideas Needed Immediately by Major Recording Companies. Cash Advances on accepted material. $5.00 to cover screening, postage, handling. Allen Productions, 220 West Jersey St./Suite 15, Eliz., NJ 07202.

READ "How To Write a Classified Ad That Pulls." Instructive booklet tells how to write an effective classified ad. Also includes certificate worth $5.00 toward a classified ad in any of our publications. For your copy, send $3.75 (includes postage) to Davis Publications, Inc., Dept. CL, 380 Lexington Ave., New York, NY 10017.

SPECIAL INTERESTS

IF YOUR IQ IS ½ OF ¼ OF ⅒ OF 10,560, READ ON.

If your IQ measures at or above 132*, you're Mensa material. Take our at-home pre-test to see whether you may qualify to join, or let our brochure tell you if you've already qualified. In Mensa, intellectual stimulation is a mathematical certainty.

Name _____

Address _____

City/State/Zip _____

☐ Send me the Mensa brochure.

☐ I'll try the at-home pre-test. Enclosed is $12.00 (check or money order in U.S. funds only, please).

mensa
The High IQ Society.

Send to: MENSA, Dept. AS91, 2626 East 14th Street, Brooklyn, NY 11235-3992

*Stanford Binet Test, Form L-M. See brochure for others.

SCIENCE Fiction MUSIC! 18 episodes: Mars, Andromeda, Betelgeuse, more! 90 minute tape! $9.95 plus $2.00 S&H: TLC Co., 12301A NE 33rd Street, Vancouver, WA 98682.

TAPES & CASSETTES

OLDTIME RADIO PROGRAMS. Great Science Fiction! Also, mysteries, comedies, westerns. Free catalogue. Carl D. Froelich, Heritage Farm, New Freedom, Pennsylvania 17349.

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

a calendar of analog upcoming events

16-18 August
WINCON II (British SF conference) at King Alfred's College, Winchester, U.K. Guests of Honour—Gene Wolfe and Brian Stableford. Registration—£15 attending, £8 supporting. Info: Wincon, 38 Outram Road, Southsea, Portsmouth, Hants. PO5 1QZ, England, U.K. 44 705 754 934.

29 August-2 September
CHICON V (49th World Science Fiction Convention) at Hyatt Regency, Chicago, Ill. Guest of Honor—Hal Clement; Artist Guest of Honor—Richard Powers; Editor Guest of Honor—Martin H. Greenberg; Fan Guests of Honor—Jon & Joni Stopa. Registration—$150 at the door. This is the SF universe's annual get-together. Professionals and readers from all over the world will be in attendance. Talks, panels, films, fancy dress competition—the works. Join now and get to nominate and vote for the Hugo Awards and the John W. Campbell Award for Best New Writer. Info: Chicon V, Box 218121, Upper Arlington OH 43221-8121.

6-8 September
BARCON (SF Club Deutschland conference) at Statthaus Bockler Park, Berlin, Germany. Registration—DM30. Info: Bernhard Kempen, Kamtnerstraβe 29, 1000 Berlin 62, Germany.

6-9 September
PORTMEIRICON 91 ("The Prisoner" convention) at Portmeirion, Wales, U.K. Info: 6 of 1/Prisoner appreciation Society, 871 Clover Drive, North Wales PA 19454.

8-14 September
VOLGA-CON (International SF convention on the Volga). Sponsored by SF Club "The Winds of Time" and the Youth Association ATOM. Info: Volga-con, % Boris A. Zavgorodny, Volgograd-66, Poste restante, 400066 U.S.S.R. Telephones: 34-74-62, 34-74-64, 34-44-09, 34-86-56.

4-6 October
7th Annual Midwest Space Development Conference at Daytonian Hilton Downtown. Info: MSDC 91, 524 West 6th Street, Lakeside OH 43440.

4-6 October
CONTEXT IV (Ohio-area SF conference) at Hilton Inn North, Columbus, Ohio. Guest of Honor—Larry Niven. Registration—$23. Info: Fanaco, Inc., Box 2954, Columbus OH 43216. (614) 889-0436.

3-7 September 1992
MAGICON (50th World Science Fiction Convention) at Orange County Civic & Convention Center, Orlando, Fla. Guest of Honor —Jack Vance; Artist Guest of Honor —Vincent Di Fate; Fan Guest of Honor —Walter A. Willis. Info: MagiCon, Box 621992, Orlando Fl 32862-1992. (407) 275-0027.

—Anthony Lewis

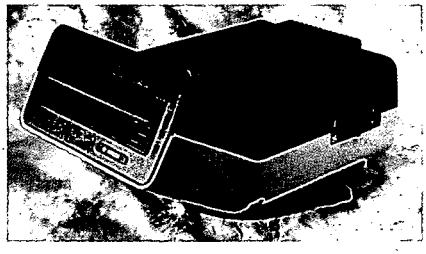
Items for the Calendar should be sent to the Editorial Offices six months in advance of the event.

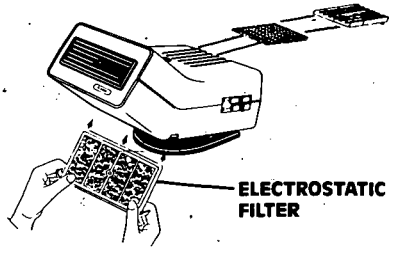
LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

MAIL ★ ORDER ★ MALL

▼ BREATHE EASIER WITH THE AIR PROCESSOR

Clean air is vital to overall good health and general well-being and there is growing concern about the quality of the air around us. Amcor's Air Processor is uniquely designed to remove indoor air pollution and improve air quality. This compact unit has a high voltage generator that produces negatively charged ions that clean the air of cigarette/cigar smoke, dust, pollen, fungal and bacterial particles as well as a host of other allergy stimuli. The Air Processor also features a blower for air circulation and a unique filter that is permanent and washable. Includes a free Ionoscope that detects the negative ions emitted from the ion generator and proves that it is functioning. Very quiet so it is perfect for any room in your house. UL listed. **$99.98** ($6.50) #A2002.





▼ SLEEP SOUNDLY WITH SOUND SLEEPER

Is noise pollution interfering with your ability to get a good night's sleep? If so, then the Sound Sleeper by Audiologic is the clock radio of your dreams. Sound Sleeper combines a state of the art AM/FM cassette clock radio with the benefits of natural sound conditioning. Sound Sleeper lets you fall asleep to the sounds of ocean surf, rushing waterfalls and/or rainfall with the flip of a switch. After a relaxing night's sleep, wake up with a buzzer or music from the radio or cassette. So why have an ordinary clock radio when you can have the cassette clock radio that not only wakes you up but also lulls you to sleep! **$89.98** ($5.50) #A2000.

TO ORDER: Send check with item number for total amounts, plus shipping & handling shown in ( ) payable to **MAIL ORDER MALL** Dept. 091 AN; P.O. Box 3006, Lakewood, N.J. 08701, or call TOLL FREE **1-800-722-9999**. NJ residents add 7% sales tax. We honor MasterCard, Visa, and American Express. Sorry, no Canadian, foreign, or C.O.D. orders. Satisfaction Guaranteed. 30 day money back guarantee for exchange or refund. Allow 30 days for delivery.

★ ★ ★ ★ ★ ★ ★ ★ ★

Magalog Marketing Group Inc. © 1991
1905 Swarthmore Ave, Lakewood, N.J. 08701

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED